

IN REPLY REFER TO:

### United States Department of the Interior

#### FISH AND WILDLIFE SERVICE

BLOOMINGTON FIELD OFFICE (ES) 718 North Walnut Street Bloomington, Indiana 47401 (812) 334-4261 FAX 334-4273

US EPA RECORDS CENTER REGION 5

August 9, 1990

Mr. Robert Swale
U. S. Environmental Protection Agency
Office of Superfund
Waste Management Division
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Swale:

Enclosed are the revisions to the Wetlands delineation report for the American Chemical Services site in Griffith, Indiana, performed under IAG-DW14934313-0. An annotated list of revisions follows:

- 1) In response to BTAG coordinator's comments regarding Pg.4, Para. 1: The paragraph explaining the procedures used to draw the preliminary map has been expanded and merged with preceding paragraphs. Hopefully, this will clarify how the soil survey was utilized.
- 2) Disturbed conditions--During the field reconnaissance flagging visit the area was scanned for disturbed conditions. No disturbed areas were observed except for small clearings resulting from other remedial activities occurring at the site. This information has been incorporated into the report and is located on page 4, paragraph 1, last sentence.
- 3) Wetland hydrology--A paragraph has been included explaining how the criterion for wetland hydrology was determined to have been met. This is located on page 4, paragraph 2.
- 4) Soil comparisons to Color Chart--Due to extreme inclement weather and the obvious difference between the hydric and non-hydric soils, the samples were taken back to the office. As was mentioned in a telephone conversation between Robin Nims and you on August 6, 1990, the soil samples were retained. The representative soil samples will be forwarded to you for reference. Many of the samples are still moist after having been stored for 3 months.
- 5) Selection of Sampling Points--The rationale for selecting additional sampling areas to replace areas that did not meet the 3 mandatory tedrical criteria is elusive. The lack of the 3 criteria indicates that the area is not a wetland. Selecting additional areas would not have influenced the outcome of the survey.

- 6) Wetland Hydrology--Due to a misinterpretation of the field survey forms, FAC species were calculated into the percent hydrophytic vegetation calculations, while species that did not have an indicator category were omitted. This oversight has been corrected. Species that did not have indicator category listings have been assigned UPL listings as suggested. However, 2 species that are found only in water, that did not have category listings, were not assigned UPL categories and were left with the category of "NONE". These corrections have not affected the outcome of the survey; only 1 additional area was determined to be non-wetland due to lack of a predominance of hydrophytic vegetation. A discussion of this information is located on page 10, paragraph 2, under the heading of Wetland I.
- 7) Table 2--Table 2, located on page 11, has been revised with the recalculation of the percent hydrophytic vegetation. This criterion was calculated using percent OBL and FACW, versus FACU and UPL. The new figures are listed in the table. The wetland determination status of representative area Q<sub>2</sub> has changed from YES to NO.
- 8) Figure 5--A key has been added to Figure 5. Text has been added explaining how the final boundaries were drawn. Also, it is explained that no additional acreage was delineated. As stated in the introduction of the report there are approximately 50 acres comprising both Wetland I and Wetland II. This information can be found on page 9.

If you have additional questions regarding the report, or the contents of this letter, please contact Robin Nims of my staff at FTS 332-4269.

Sincerely yours,

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David C. Hudak Supervisor Wetlands Delineation at American Chemical Services Hazardous Waste Site, Griffith, Indiana. IAG-DW14934313-0

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May 1990

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#### Summary

At the request of the U.S. Environmental Protection Agency, Region V, the U.S. Fish and Wildlife Service conducted a wetlands delineation for site wetlands potentially impacted by contaminants originating at the American Chemical Services (ACS) hazardous waste site.

Office review and field surveying indicated numerous wetlands exist at the ACS site, many of which are not identified on the National Wetland Inventory. The diversity of wetland types present provide habitat for a variety of wildlife species.

#### INTRODUCTION

The American Chemical Services (ACS) Superfund site is located in Griffith, Indiana on the outskirts of the city's southeast side. The site was placed on the National Priorities List in 1983 as a result of investigations into chemical disposal practices on the site. ACS operates as a chemical/solvent recovery facility, which also has a limited chemical manufacturing operation. During the course of its operations, ACS dumped and otherwise disposed of unrecoverable solvents on the property, in addition to transporting waste to the adjacent Griffith City Landfill. Kapica Drum, Inc. also allegedly disposed of drum-cleaning residues on ACS property. These 3 sites total 52 acres and jointly comprise the official ACS site.

The National Wetland Inventory (Figure 1) indicates numerous and extensive wetlands within a 1-mile radius of the ACS site to the southwest, south, southeast, east, and northeast. There is an extensive wetland complex adjacent to the northwest boundary of the site. These wetlands are dissected and bordered by the Grand Trunk Western Railroad lines, the Chesapeake and Ohio Railroad lines, and the abandoned Erie-Lackawanna Railroad lines. The wetlands to the north of the Grand Trunk Western lines were not within the project boundary limits, however, they are likely hydraulically connected. The NWI map classifies this wetland complex as palustrine, emergent, semi-permanent/palustrine emergent, seasonally flooded. The entire complex is approximately 78 acres, however, only 50.5 acres were included in the present delineation.

#### **OBJECTIVES**

The objectives of this project were:

- To ground-truth and verify wetlands delineated on the National Wetland Inventory maps.
- 2. To identify other wetland areas not included in the National Wetland Inventory.
- To identify dominant vegetation in the various wetland areas.
- 4. To assess relative value of the various wetland habitats for fish and wildlife resources.

#### **METHODS**

The methods utilized in this delineation are outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989). Because of the relative homogeneity of the site, the soils assessment procedure was selected. Prior to the field work, an office review was conducted to preliminarily outline the area in question. Due to the unavailability of the most recent aerial photographs the preliminary boundaries were outlined from a 1984 photograph, obtained from the EPA project manager. Based upon the field inspection, the 1984 photograph was accurate with the exception of approximately 5 additional acres lost to the Griffith Landfill operation.

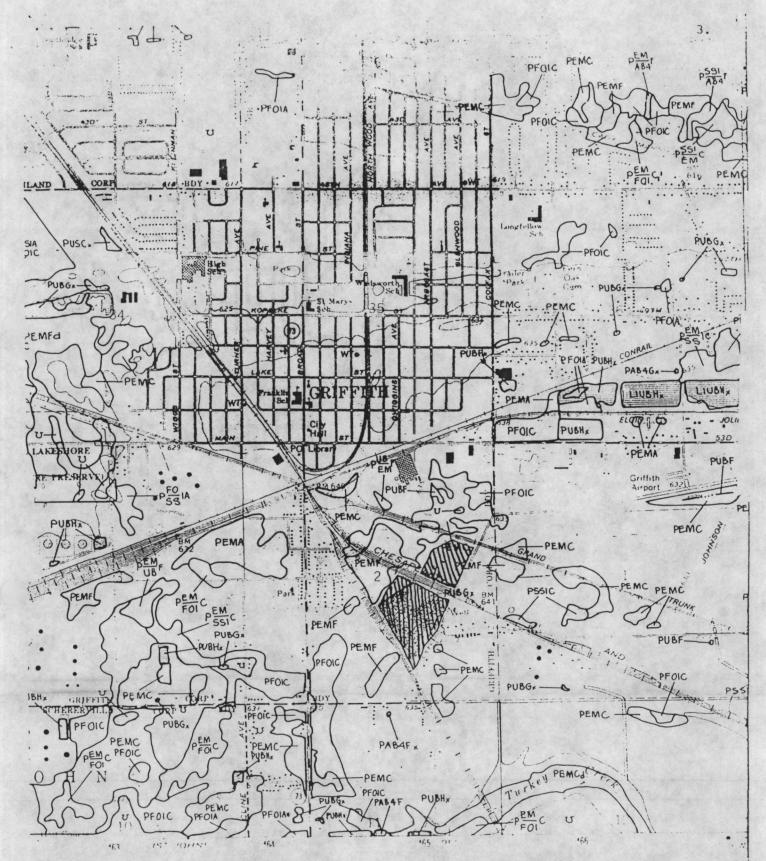


FIGURE 1. National Wetland Inventory map in the vicinity of the American Chemical Service site, Griffith, Indiana. USGS Highland Quadrangle. Cross-hatched area is ACS.

During the office review and map preparation a copy of the U.S. Soil Conservation Service Soil Survey for Lake County, Indiana (1972) was consulted to determine the presence or absence, and locations of hydric soils. The Lake County Indiana Survey sheet number 21 (Figure 2) indicates the majority of the area in question consists of Maumee loamy fine sand, interspersed with areas of Plainfield fine sand, Watseka loamy fine sand, and a small section of Tawas muck. The Maumee loamy fine sand and Tawas muck are classified by the U.S. Department of Agriculture and the Soil Conservation Service (1986) as hydric soils. The soil survey was used to compare soil types to the general configuration of the visual boundary of the wetlands on the aerial photograph. To avoid damaging the aerial photograph, a clear plastic overlay was attached and the information transcribed. Points along the visual perimeter of the wetland that coincided with the hydric soils boundaries were randomly selected and their compass bearings recorded to assist in field location. Location of the points were arbitrarily located from 88 to 282 feet apart based upon a scale of 1 inch (in) = 25 millimeters (mm) = 220 feet (ft), 1 mm = 8.8 ft. The preliminary map generated in the office (Figure 3) was used in the field reconnaissance flagging effort. In the field, point A was located on ground by its position relative to the railroad track embankment and the tree row in the upper northwest corner of the study area. Based upon the preliminary map, point B was located with the use of a Suunto MC-1 mirror compass and was measured off with a tape measure 220 feet S 66 E of point A. All other points were located and measured off in the same manner. Orange flags were placed at each point, and pink flags were placed every 55 feet to assist in maintaining the proper bearing alignment. During the flagging reconnaisance visit, no sign of disturbed conditions existed in the wetland areas with the exception of the railroad embankments that were placed through the wetlands, and minor disturbances such as small clearings for groundwater wells etc., resulting from other remedial investigation activities occuring at the site. An apparent illegal fill had occured in the wetland located adjacent to the Griffith City Landfill.

During the reconnaisance flagging visit it was noted that the entire wetland area identified on the National Wetland Inventory either possessed standing water (up to 2.5 feet in some areas; 5 feet in the ditches), or water-logged saturated soils (water table at soil surface). Based upon these field observations it was determined that the hydrologic criteria for wetlands was met.

To aid in the identification of the different soil types in the field, the soil profiles for Maumee loamy fine sand and Plainfield fine sand were recorded (Table 1). Because the soil sample probes were taken to a depth of 18 inches, only the first 3 incremented intervals were noted. Soil samples were collected at each point with a 21 inch Hoffer Soil Sampler probe. Due to extreme inclement weather, and the strikingly obvious difference between the hydric and non-hydric soils, the soil samples were observed in the field and the lowest 3 inches were collected in whirl-pak bags for later comparisons to the Munsell Soil Color charts. Areas possessing standing water did not yield soil samples due to wash-out upon extraction of the probe. In these instances the whirl-pak bag containing the point location tags were transported back to the office empty.

Representative observation areas (Figure 4) were selected based upon several factors. In addition to selecting areas that met the hydric soil criterion, representative observation areas that had apparent characteristics, but were not identified on the National Wetland Inventory map were also chosen. The plant communities were characterized, and the percent areal cover of the dominant species

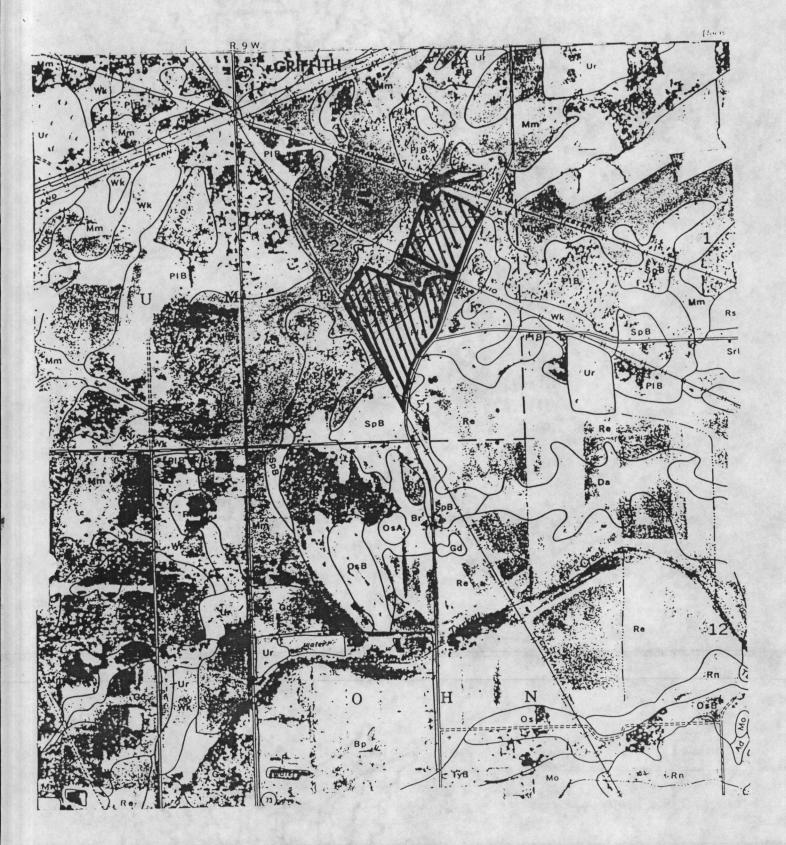


FIGURE 2. U.S. Soil Conservation Survey-Lake County. Plate number 21. Cross-hatched area is ACS. Shaded areas are hydric soils.

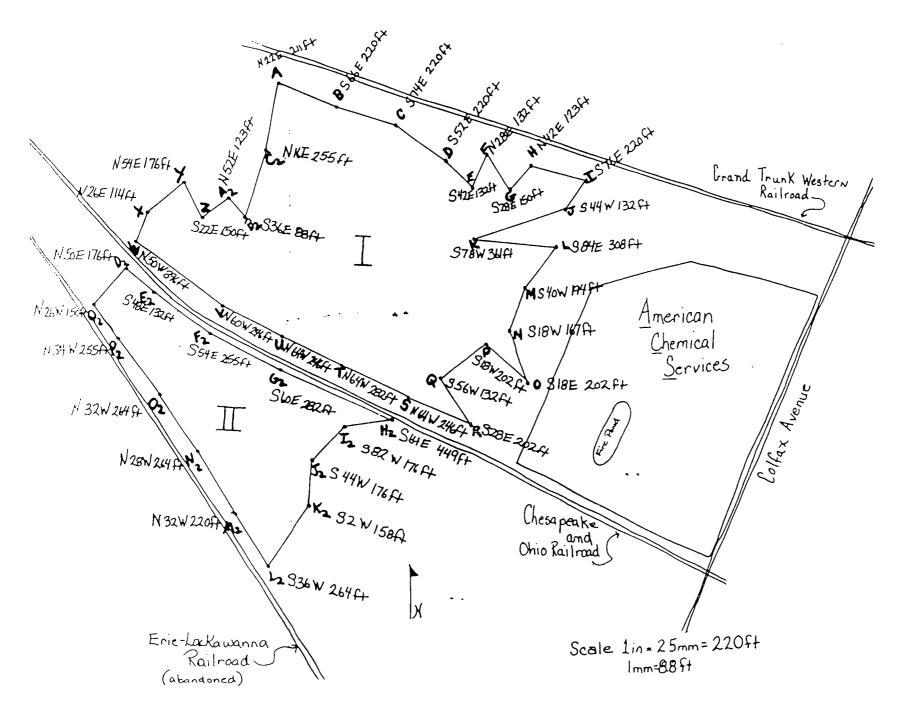


FIGURE 3. Preliminary wetland boundaries transcribed from 1984 aerial photograph. (Reduced 64%)

Table 1. Typical, Profiles for Maumee loamy fine sand (Hydric) and Plainfield fine sand (Non-hydric) in Lake County, Indiana.

Maumee loamy fi	ne sand		Plainf	ield fine sand	
Depth	Color	Munsell Notation	Depth	Color	Munsell Notation
-9 inches	Black	N 2/0	0-4 inches	Dark Grey	10 YR. 3/1
9-16 inches	Black	N 2/0	4-6 inches	Greyish brown	10 YR. 4/2
16-21 inches	Black	N 2/0	6-27 inches	Yellowish brown	10 YR. 5/4

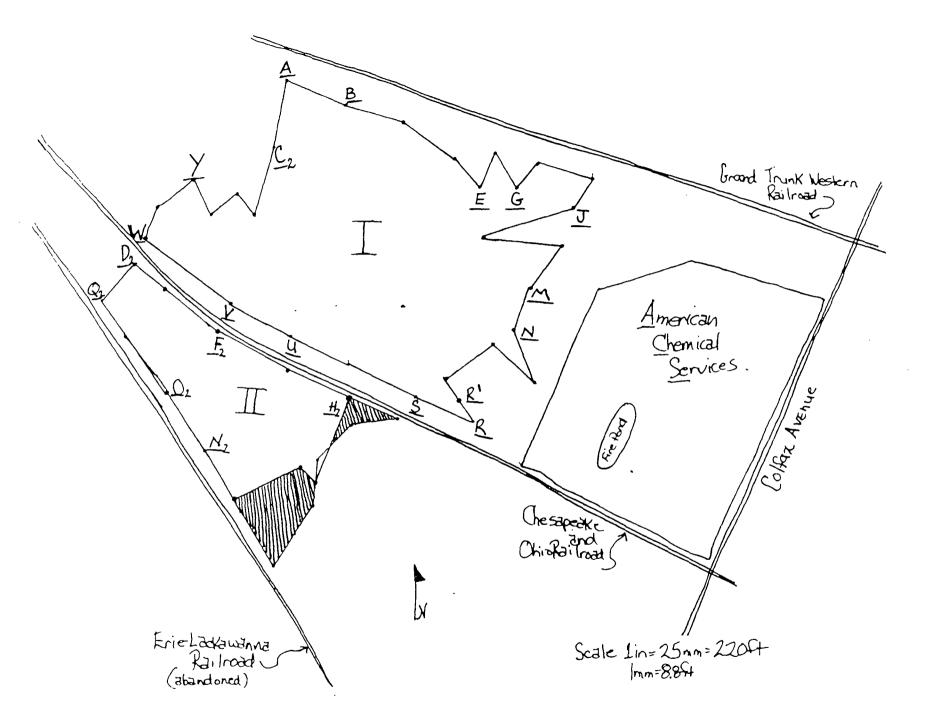


FIGURE 4. Representative observation areas for vegetation sampling. Cross-hatched area lost to landfill expansion  $^{\circ}$ 

in the communities were visually estimated. Samples of the dominant vegetation at each of the representative areas were collected in 8 gallon plastic bags and transported to the office for later identification. A list of references used is included in Appendix 1. Once the vegetation was identified the information was recorded on field data forms and the indicator status of the species was obtained from the National List of Plant Species that occur in Wetlands; Indiana (1988). A wetland determination was then made for each representative observation area based upon the 3 mandatory technical criteria; hydrophytic vegetation, hydric soils, and wetland hydrology, as outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The information obtained in the survey was used to prepare the final map of the site wetlands. It is important to note that no "additional" wetlands have been delineated in terms of acreage. This study has examined wetlands currently shown on the National Wetland Inventory map, and differentiated between the existing habitat types that are not delineated on the NWI within the original boundaries. The wetland boundaries indicated on Figures 5 and 6 were drawn based upon visual field observations of shifts in dominant vegetation. All soils within the peripheral boundaries are hydric.

#### RESULTS AND DISCUSSION

Of the 21 representative observation areas sampled, 12 met all 3 mandatory technical criteria for wetland determination (Table 2). Of the 9 areas that failed the mandatory technical criteria test, M, N, S, D<sub>2</sub>, and H<sub>2</sub> lacked all 3 criteria; C<sub>2</sub> and Q<sub>2</sub> lacked hydrophytic vegetation criteria; R<sup>1</sup> lacked hydric soil and hydrology criteria, and F<sub>2</sub> lacked wetland hydrology and hydrophytic vegetation criterion.

#### Wetland I

Wetland I is bounded by the Grand Trunk Western Railroad, the American Chemical Services site, and the Chesapeake and Ohio Railroad. Based upon the results of the survey this area is more complex than the National Wetland Inventory (NWI) indicates (Figure 5). NWI shows this area as consisting of a large palustrine, emergent, semi-permanent mixed with seasonally flooded wetland. The NWI does not show any of the forested or scrub-shrub wetlands bordering the palustrine emergent area. Of the 15 representative observation areas selected for Wetland I, the 5 that did not meet the technical criteria for wetland determination were all transitional zones between the wetland-upland interface. Non-hydric soils were present at 4 of the 5 areas. All of the areas possessed hydrophytic vegetation, but the percentage of FACU and UPL exceeded the percentage of FACW and OBL species at each of the 5 areas except  $\mathsf{R}^\mathsf{I}$ . It should be noted that some species were collected at the various areas that did not have indicator category designations; these species were not located in either the state or national list of plant species found in wetlands. sophistic to automatically list species not included on the National Plant List as UPL species, however, based upon reviewers suggestions this has been done with the exception of 2 species of liverworts: <u>Riccia fluitans</u> and <u>Ricciocarpus natans.</u> These two species are bryophytes which are found <u>in</u> the water; it would be completely erroneous to list these as UPL species.

#### Wetland II

Wetland II is bounded by the Chesapeake and Ohio Railroad, the City of Griffith landfill, and the abandoned Erie-Lackawanna Railroad bed. Wetland II, according to the NWI is a palustrine, emergent, semi-permanent wetland. The various other habitat types surrounding it have been omitted from the official map.

This wetland area has been impacted due to past and present expansion of the City of Griffith Landfill. Approximately 5 acres of emergent/scrub-shrub/forested wetland on the north and southeast corners have been filled since the 1984 aerial photograph was taken. There is also a gravel road/turn-around that appeared to have been recently laid in the center of the palustrine, emergent, seasonally flooded wetland (Figure 5). This was probably an illegal fill; the U.S. Army Corps of Engineers has been notified.

There were 4 representative observation areas that did not meet the 3 technical criteria for wetland designation. However, 3 areas were placed along the railroad embankment, due to the location of a drainage ditch (approximately 5 feet deep) lying between the railroad tracks and the wetland area to the south of the ditch. Additional representative areas were not selected to replace areas not meeting the 3 mandatory criteria, any additional points along the railroad embankment would yield

Table 2. Results of the technical criteria test for 21 representative observation areas at the ACS site, Griffith, Indiana.

<u>Area</u>	Soil Series	Hydrophytic Vegetat	Hydric	Soil	Wetland H	Hydrology	Wetland	Determination
		% OBL, FACW	Yes	No	Yes	No	Yes	No
Α	Maumee loamy fine sand	71.0	х		Х		Х	
В	Maumee loamy fine sand	100.0	X		X		X	
Ε	Maumee loamy fine sand	66.7	X		· X		X	
G	Maumee loamy fine sand	88.0	Х		Х		X	
J	Maumee loamy fine sand	100.0	X		Х		X	
М	Plainfield fine sand	25.0		Х		X		X
N	Plainfield fine sand	20.0		Х		X		X
$R^1$	Plainfield fine sand	50.0		Х		X		X
R	Maumee loamy fine sand	66.0	X		X		X	
S	Plainfield fine sand	45.0		Х		X		X
U	Maumee loamy fine sand	100.0	X		X		X	
V	Maumee loamy fine sand	100.0	X		X		X	
W	Maumee loamy fine sand	75.0	X		X		X	
Y	Maumee loamy fine sand	60.0	X		X		X	
$C_2$	Maumee loamy fine sand	16.0	X		X			X
$D_2^2$	Plainfield fine sand	14.0		X		X		X
$F_2^2$	Maumee loamy fine sand	40.0	X			X		X
$H_2$	Plainfield fine sand	25.0		X		X		X
$N_2$	Maumee loamy fine sand	100.0	X		X		X	
02	Maumee loamy fine sand	100.0	X		Х		X	
$Q_2$	Maumee loamy fine sand	25.0	X		X			X

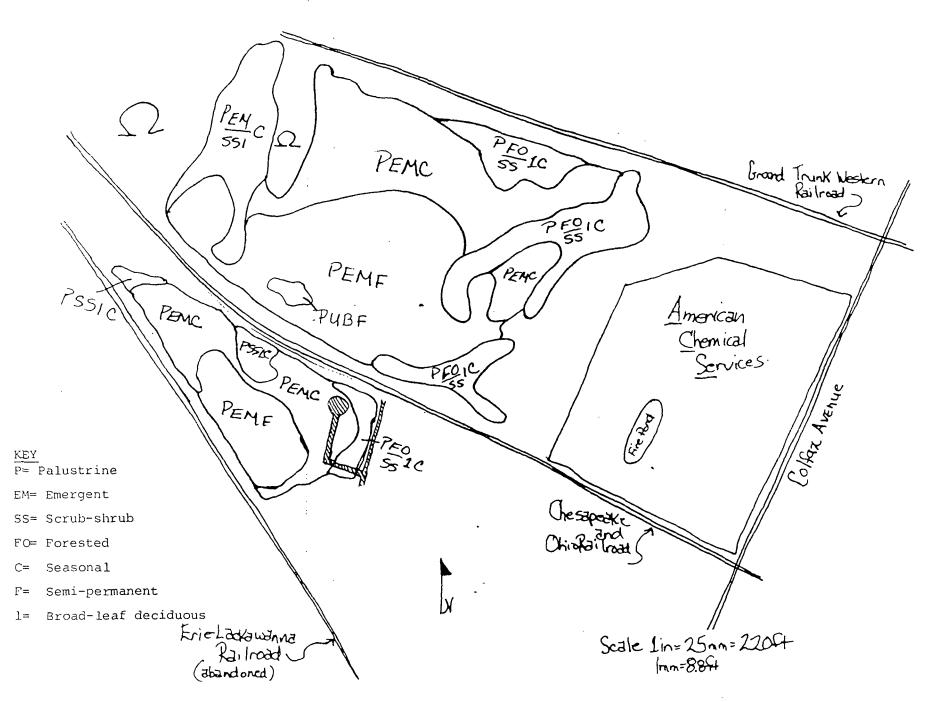


FIGURE 5. Wetland designations at the ACS site, Griffith, Indiana. Cross-hatched area is location of the illegal 5service road/turn-around fill.

the same results. Technically, the entire area would be classified wetlands if the railroad tracks and embankments did not exist. The 4th area lacked a predominance of hydrophytic vegetation.

#### NATURAL RESOURCES

This field investigation indicated that the natural resources and natural resource values of the wetland habitats are greater than originally suspected because of the diversity of habitat types present: emergent, scrub-shrub, and forested.

The vegetation of "marshes" is characterized by emergent aquatic plants growing in permanent to semi-permanent shallow water. Also present are species of shallow open water communities, as well as those found in sedge meadows and seasonally flooded basins. Marshes are among the most productive of all wetlands for waterbirds and furbearers, and can also provide spawning and nursery habitat for many species of fish. Birds that use marshes for breeding and feeding include ducks, geese, rails, herons, egrets, terns, and many songbirds. Raptors such as the osprey, bald eagle, and northern harrier frequent marshes in search of prey. Important furbearers inhabiting marshes include beaver, muskrat, and mink. Excellent winter habitat can be provided for upland wildlife, including ring-necked pheasant and eastern cottontail (Eggers and Reed 1987).

The emergent wetlands in the centers of wetland areas I and II are predominated by cattails. A list of species collected can be found in Table 3. Cattail stands provide important food and cover for wildlife. For example, the rhizomes are eaten by geese and muskrats. Muskrats also use the foliage to construct their lodges, which in turn can provide resting and nesting sites for waterbirds. Yellow-headed blackbirds, red-winged blackbirds, and marsh wrens build their nests in cattail vegetation. Wetland area I contains an open water area with a muskrat den and much activity in this area was apparent.

The transitional zones between the emergent areas and shrubby or forest areas support hydrophytic vegetation on saturated but not inundated soils. Plants occurring in these areas include species found in other communities, such as the annuals of seasonally flooded basins, emergent aquatics of marshes, and invading shrubs or trees, which are present as scattered, small individuals.

The transitional emergent zones are particularly important for their water quality functions. Wildlife habitat is provided for many species including sandhill crane, ring-necked pheasant, common snipe, sedge wren, small mammals, and white-tailed deer. The composites found in these areas are an important fall and winter food source for songbirds.

Scrub-shrub wetlands are plant communities dominated by woody vegetation less than 20 feet in height and with dbh's of less than 6 inches growing on saturated to seasonally flooded soils. They can be dominated by willows and/or red-osier, and sometimes silky (swamp) dogwood. These areas usually retain some of the forbs, grasses, and sedges of the transitional emergent zones. The vegetation in scrubshrub wetlands possesses a variety of wildlife value. Willows are browsed by white-tail deer and eastern cottontails; red-osier dogwoods provide berries for song birds and ruffed grouse and are browsed by deer and rabbits; and elderberry also provides berries for songbirds and ruffed grouse.

Forested wetlands are dominated by mature conifers or lowland hardwood trees. They

Table 3. List of Vegetation Species collected on April 10-11, 1990 at the ACS site, Griffith, Indiana.

Caiantifia Nama	Common Nama	Indicator Catagory
Scientific Name	Common Name	Indicator Category*
Agrimonia parviflora	Agrimony	FAC+
A. pubescens	Agrimony	UPL
Ampelopsis arborea	Peppervine	FACW
Apocyneum androsaemifolium	Spreading dogbane	UPL
Aronia arbutifolia	Red chokeberry	FACW
Betula allegheniensis	Yellow birch	FAC
Caltha palustris	Marsh marigold	OBL
<u>ltis</u> <u>occidentalis</u>	Hackberry	FAC-
Cornus ammonum	Swamp dogwood	FACW+
C. stolonifera	Red-osier dogwood	FACW
Corylus americana	Hazelnut	FACU
Cytisus scoparius	Scotch broom	UPL
Dipsacus sylvestris	Teasel	FAC
Fragaria virginiana	Common Strawberry	FAC-
Galium aparine	Bedstraw	FACU
Hamamelis virgiana	Witch hazel	, FACU
Liquidambar styraciflua	Sweet Gum	FACW
<u>Ludwigia glandulosa</u>	Ludwigia	OBL
Lyriodendron tulipifera	Tuliptree	FACU+
Nyssa sylvatica	Tupelo	FACW+
Onoclea sensibilis	Sensitive fern	FACW
Populus deltoides	Cottonwood	FAC+
P. grandidentata	Large-tooth Poplar	FACU
<u>tremoides</u>	Quaking Aspen	FAC
<u> Lunus pennsylvanica</u>	Pin cherry	FACU
<u>Pteris</u> <u>esculenta</u>	Braken fern	FACU
Quercus alba	White oak	FACU
Q. bicolor	Swamp white oak	FACW+
Q. coccinea	Scarlet oak	$\mathtt{UPL}$
Q. palustris	Pin oak	FACW
Q. rubra	Northern red oak	FACU
Q. <u>velutina</u>	Black oak	UPL
Rhus copellina	Dwarf sumac	UPL
Riccia fluitans	Liverwort	NONE
Ricciocarpus natans	Liverwort	NONE
Rosa carolina	Wild rose	FACU-
R. multiflora	Multi-flora rose	FACU
R. nitida	Northeastern rose	UPL
Rubus allegheniensis	Highbush blackberry	FACU+
R, canadensis	Smooth blackberry	UPL
R. hispidus	Swamp dewberry	FACW
R. villosa	Low blackberry	UPL
Salix discolor	Pussy willow	FACW
S. exigua	Sandbar willow	OBL
	January Markey	V 2.3

Table 3. List of Vegetation Species (Con't).

Scientific Name	Common Name	Indicator Category
Sambucus canadensis	Elderberry	FACW-
Solidago altissima	Golden rod	FACU
Sonchus arvensis	Field sow-thistle	FAC-
<u>Spiraea alba</u>	Meadow sweet	FACW+
S. latifolia	Meadow sweet	FACW-
Stenanthium gramineum	Featherbells	FAC
Thelypteris thelypteroides	Marsh fern	FACW
Typha angustifolia	Narrow-leaf cattail	OBL
<u>latifolia</u>	Broad-leaf cattail	OBL
<u>Ulmus</u> <u>rubra</u>	Slippery elm	FAC
Verbascum thaspus	Wooly mullein	UPL
<u>Verbena urticifolia</u>	White vervain	FAC+
Viburnum prunifolium	Black haw	FACU
<u>Vitis</u> <u>aestivalis</u>	Summer grape	FACU
V. vulpina	Frost grape	FACW-
Xanthorhiza simplissima	Yellowroot	UPL

<sup>\*</sup>Species with bold **UPL** indicator status are not listed in the state or national plant lists and have been assigned this status by default.

are important for stormwater and flood retention, and also provide habitat for white-tailed deer, furbearers, songbirds, ruffed grouse, barred owl, and amphibians. The various wetland habitats at the American Chemical Services site are being used by a variety of wildlife species, many of which were observed during the reconnaissance flagging visit, and the field survey visit (Table 4).

#### ADDITIONAL WETLANDS

At a meeting held by the U.S. EPA project manager on February 28, 1990, FWS was requested to observe the area immediately east of American Chemical Services, adjacent to Colfax Road to determine if wetlands were present. This area was walked during the field reconnaissance flagging visit, which revealed various wetlands, some of which were not indicated on the NWI maps (Figure 6). There is a palustrine, emergent, semi-permanent wetland approximately 7 acres in size about 0.1 mile east of Colfax Road, that is identified on the NWI map. The field check revealed that this wetland extends west and southward within 20-30 feet of the roadway. These wetlands would be classified as a combination palustrine, emergent/scrub-shrub forested area with water regimes ranging between temporary, saturated, seasonal, seasonal saturated, and semi-permanent.

A wetland delineation was not conducted for this area, however, the soil survey maps indicate that portions do contain hydric soils.

#### ENDANGERED SPECIES

The Highland area of Lake County is represented by many federal and state species of special emphasis/concern, in addition to several federal threatened and endangered species. An annotated list follows:

Fed E Fed E Fed T Sp EM/CN

Indiana bat
Peregrine falcon
Pitchers thistle
Great blue heron
American bittern
Black tern
Least bittern
King rail
Yellow-crowned night heron
Spotted turtle
Western smooth green snake
Franklin's ground squirrel

Blanding's turtle

Bald eagle

Myotis sodalis

(Falco peregrinus) \*Migratory

(<u>Cirsium pitcheri</u>) (<u>Ardea herodias</u>)

(<u>Botaurus lentiginosus</u>) (<u>Chlidonis niger</u>)

(<u>Ixobrychus exilis</u>) (<u>Ralus elegans</u>)

(Nycticorax violaceous)

(Clemmys guttata)
(Opheodrys vernalis)
(Spermophilus franklini)
(Emydoidea blandingi)

(<u>Haliaeetus leucocephalus</u>) \*Historical

This endangered species list constitutes informal consultation only, and is not intended to fulfill the requirement of Section 7 of the Endangered Species Act of 1973, as amended. If, after review of the Phase I Remedial Investigation report, it appears likely that any endangered species may have been/may be affected by this site, it may be necessary to initiate formal consultation. If as a result of further consultation, a "no effect" determination is made regarding endangered species, that determination should be revisited after 1 year for new information, or newly listed species.

Table 4. List of wildlife species observed utilizing the wetland habitats at the American Chemical Services site, Griffith, Indiana April 10-11, 1990.

Scientific Name	Common Name
BIR	DS
<u>Agelaius phoeniceus</u>	Red-winged blackbirds (many)
<u>Aix sponsa</u>	Wood ducks (1 pair)
<u>Anas platyrhynchos</u>	Mallard ducks (2 pairs)
<u>Branta</u> <u>canadensis</u>	Canada geese (1 pair)
<u>Charadrius</u> vociferus	Killdeer (1)
Corvus brachyrhynchos	Common crows (many)
Dendrocopos pubescens	Downy woodpeckers (2)
D. villosa	Hairy woodpeckers (1)
Larus spp.	Gulls (many)
Phasianus colchicus	Ring-necked pheasant (1 male)
Regulus satrapa	Golden-crown kinglets (2)
Richmondena cardinalis	Cardinals (3)
<u>Spinus tristis</u>	American goldfinches (1 pair)
MAMM	ALS
Procyon lotor	Raccoon (tracks)
Odocoileus virginianus	White-tailed deer (tracks)
Ondatra zibethicus	Muskrats (3) & den
Sylvilagus floridanus	Eastern cottontails (4)

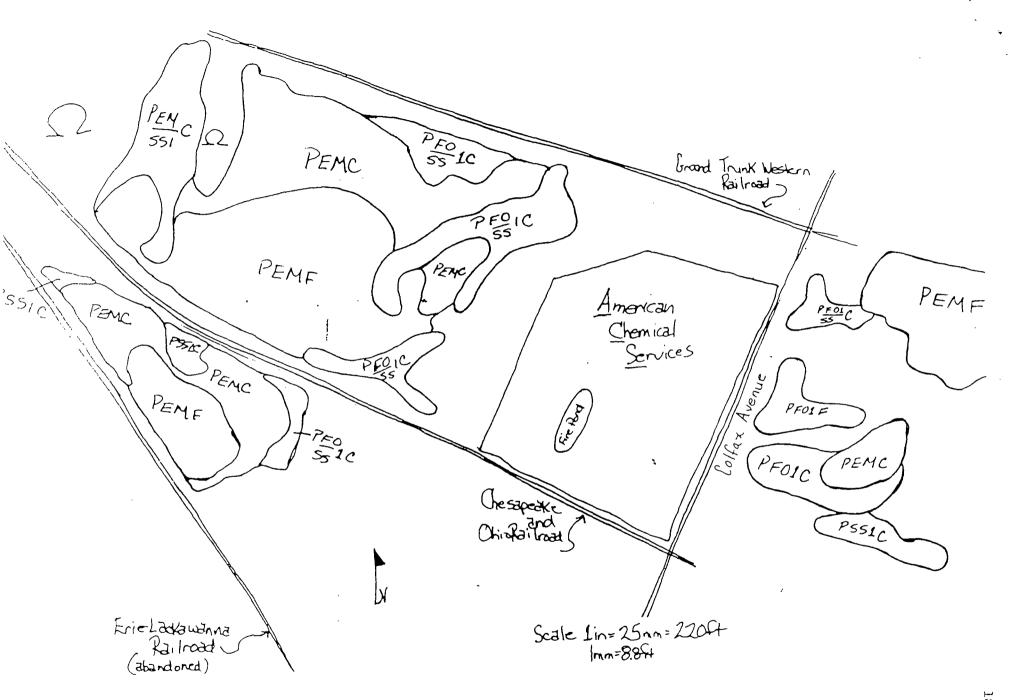


FIGURE 6. Approximate locations and classifications of additional wetlands located near the ACS site, east across.

Colfax Avenue, Griffith, Indiana.

#### CONCLUSIONS

- 1. Wetlands identified on the NWI do exist at the American Chemical Services site.
- 2. There are wetlands present at the site that are not identified on the NWI. These wetlands consist of palustrine, forested, and scrub-shrub transitional zones between the NWI-identified emergent wetland and upland areas.
- 3. The wetlands present at the site provide habitat diversity for a variety of wildlife species.
- 4. The wetlands present on the site possess potential habitat for federal threatened and endangered species, state and federal species of special concern/emphasis, and other birds protected by the Migratory Bird Treaty Act.

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#### APPENDIX 1

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APPENDIX 2 Field Data Forms

1	Project/Site: ACS  Applicant/Owner: EPA		State: <u>LN</u> t Community A	Date: April County: LAK					
	Note: If a more detailed site description of the conditions are selected by the conditions. Yes Note that the vegetation, soils, and/or hydrony the Note that the vegetation of the condition of	exist at the plant cor on back) frology been significa	mmunity?		отвоок, . <u>— — -</u> -	· ·			
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	Is the wetland hydrology criterion met? Yes No								
	<sup>1</sup> This data form can be used for the Assessment Procedure <sup>2</sup> Classification according to "Soil Ta	Hydric Soil Assessn			menty				
8-2		13	sp. 4	8 non-we	+				

20 21 stes

	Field Investigator(s): R. Nims  Project/Site: ACS State: IN County. LAKE
	Project/Site: ACS State: TN County. LAKE Applicant/Owner: EPA Plant Community: #/Name: E
	Applicant/Owner: EPA Plant Community:#/Name: E  Note: If a more detailed site description is necessary, use the back of data form or a field notebook.
	Do normal environmental conditions exist at the plant community?
	Yes Vo (If no, explain on back)
	Has the vegetation, soils, and/or hydrology been significantly disturbed?  Yes
	165 (ii y65, 6xpiain on back)
	VEGETATION
	Indicator Indicator
	Dominant Plant Species Status Stratum Dominant Plant Species Status Stratum
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ow blackberry	2. Rubus villosa (Law bk/bany) Rone 12.
ensitive ferre	3. Onecleu sensibile FACW 13.
swam dogwood	14 Cornus ammonum FACW+ 14
ardia willow	5. 50 lix exigua 15.
ommon stranderry	6. Fra gavia Virginiante FAC 16.
Tuesdo Tuesdo Tuesdo de la composición del composición de la composición de la composición del composición de la composición del composición de la composición de la composición del composici	7. Ayssa sylvatica FACW (116t.) 17.
CONTRACTOR	8. Lyriodendia. tulipitera FACUT 18.
·	9. Sedge Spp 2 19
٠,٠	Percent of dominant species that are OBL, FACW, and/or FAC 85,7%
(1 e 5	is the hydrophytic vegetation criterion met? Yes Vo
	Rationale:
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	SOILS
·	Series/phase: Maurice luamy fine acraile Subgroup: Typis thapplagends
	is the soil on the hydric soils list? Yes Vo Undetermined
	Is the soil a Histosol? Yes No Histic epipedon present? Yes No
	Is the soil: Mottled? Yes No Gleyed? Yes No
n E	Matrix Color: N 2/0 Black Mottle Colors:
18)	Other hydric soil indicators: — Wet
	Is the hydric soil criterion met? Yes V No No
•	-Rationale: nitets Chrome ovitave
	HYDROLOGY
	Is the ground surface inundated? Yes No Surface water depth:
	Is the soil saturated? Yes No No
4	Depth to free-standing water in pit/soil probe hole:
	List other field evidence of surface inundation or soil saturation.
1.05	Is the wetland hydrology criterion met? Yes V No No
$\mathcal{N}_{\mathcal{C}_{\mathcal{A}}}$	Rationale:
)	Transfer
	JURISDICTIONAL DETERMINATION AND RATIONALE
	Is the plant community a wetland? Yes No
	Rationale for jurisdictional decision:
	1 This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community
	Assessment Procedure.
	<sup>2</sup> Classification according to *Soil Taxonomy.*

	Field Investigator(s): K. Nims Project/Site: ACS	<u> </u>		State: IN	Date: LAK	<u> </u>	
	Applicant/Owner: _ <b>E_PA</b>	·	- Plant	Community #/Nam	o: <b>منی</b>		
	Note: If a more detailed site descripti	on is necessa	ary, use	the back of data to	orm or a field not	ábook.	
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Land Comment		Indicator	VEGET	ΑΠΟΝ		Indicator	
Sur pregnod			atum	Dominant Plant Sp	ecies	Status	Stratum
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The second second				12			
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Sand Control of the C	5 Missa Surviva	CAC+JF		15			
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n readow covert	9. Spirer alber #	ACWIT		19			
n seadous	10			20			
	Percent of dominant species that are	OBL, FACW	l. and/o	r FAC 88	90		
nes	Is the hydrophytic vegetation criterio Rationale:	n met? Yes		No			
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<i>.</i>	List other new evidence of surface in			anon.			
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	Is the plant community a wetland?						
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	Field Investigator(s): Note: Note: If a more detailed site described in the control of the contr	iption is nedi	Plan essary, us	e the back of data form or a	a field noteboo	ok.
	Do normal environmental condition	s exist at the	e plant coi	mmunity?		
	Yes No (If no, expla	in on back)				
	Has the vegetation, soils, and/or h		in significa	antly disturbed?		
	Yes No (If yes, expla	iin on back)				
•			VEGE	TATION		
		Indicator	VLOL	1211011	Inc	dicate
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	3. From burn came desicio	EACU;-		13	<del></del>	
	4. Stena nelicen accomine	- FAC		14		
	5					
	6			16		
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	10. Percent of dominant species that					
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	Field Investigator(s): N. 191m5		State: IN County LAXE							
	Project/Site: ACS		— State: <b>↓</b> Cou	inty: _ Latt. Bar La						
	Applicant/Owner: EPA Plant Community #/Name: J  Note: If a more detailed site description is necessary, use the back of data form or a field notebook.									
	Avoid. If a more detailed site description is necessary, use the back of data form of a next hoteledox.									
	Do normal environmental conditions exist a YesNo (If no, explain on bac Has the vegetation, soils, and/or hydrology YesNo (If yes, explain on bac	k) been signif	•							
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	Indica Dominant Plant Species Status	tor	SETATION	Indicator Status	_					
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i	10									
1485	Percent of dominant species that are OBL Is the hydrophytic vegetation criterion met	Yes_ <u>U</u>	nd/or FAC 10070 /_ No	·						
,	Rationale:				* * * * * * * * * * * * * * * * * * * *					
			SOILS							
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	Is the soil saturated? Yes No									
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ye)	Is the wetland hydrology criterion met? Y Rationale:	9S								
	JURISDICTIONAL DETERMINATION AND RATIONALE									
	Is the plant community a wetland? Yes No									
	This data form can be used for the Hydric Assessment Procedure.  Classification according to "Soil Taxonom"	Soil Asses		Plant Community						
	Classification according to Soil Faxonom	<b>y</b> .								

•	Project/Site: ACS	15	· · · · · · · · · · · · · · · · · · ·		Date:	LAKE				
	Project/Site: #C5			State: I	County:	LACE	· ,			
	Applicant/Owner: EPA		Plan	it Communit	/ #/Name:					
	Note: If a more detailed site description is necessary, use the back of data form or a field notebook.									
	Do normal environmental conditions exist at the plant community?  Yes No (If no, explain on back)  Has the vegetation, soils, and/or hydrology been significantly disturbed?  Yes No (If yes, explain on back)									
			VEGE	TATION						
		Indicator				Indicator				
Letterin .	Dominant Plant Species	Status	Stratum	Dominant I	Plant Species	Status	Stratum			
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γo	Is the wetland hydrology criterion met? YesNo									
	JURISDICTIONAL DETERMINATION AND RATIONALE									
	Is the plant community a wetland? Yes No  Rationale for jurisdictional decision:									
	This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.  Classification according to "Soil Taxonomy."									
	Table of the control									

Applicant/Owner:	Projec	ied/Site	or(s): K				State: 1	-N	Date: _ County:	LAV	Z=-	
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ALL TABLE  1. CHANGE ALLOW FACE  1. CHANGE ALLOW THE PACK  2. CHANGE ACCURATE  1. CHANGE ALLOW THE PACK  3. Lighting a general section of the pack of	Dom	minant Plan	nt Species			Stratum	Domina	nt Plant S	Species		Status -	Stratum
Series/phase: Plainfield fine Sand  Is the soil on the hydric soils list? Yes No Undetermined  Is the soil on the hydric soils list? Yes No Gleyed? Yes No Matrix Color: 15 No Sithe hydric soil indicators:  Is the hydric soil indicators:  Is the hydric soil indicators:  Is the hydric soil criterion met? Yes No Surface water depth:  Is the soil on the soil or iterion met? Yes No Surface water depth:  Is the soil strated? Yes No Surface water depth:  Is the soil strated? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the wetland hydrology criterion met? Yes No Surface water depth:  Is the plant community a wetland? Yes No Surface No Surface water depth:  But the plant community a wetland? Yes No Surface No Su			<del></del>	<del>-</del>					<del></del>			
Straw 5 Calent a Academic FACU 15 c, Fraken form 6 Calenta FACU 16 c, Fraken form 6 Calenta FACU 17 c, 17 c, 17 c, 17 c, 17 c, 17 c, 18 c, 18 c, 19												
Scries/phase: Plainfield fine Sound  Series/phase: Plainfield fine Sound  SollS  SollS  Series/phase: Plainfield fine Sound  SollS	~ I	Ludwigs	a alundu	losa o	<u> </u>		13					
Series/phase: Plain Field Fine Same Subgroup: Typic Ustipsamme Is the soil on the hydrosoils list? Yes No Undetermined Is the soil a Histosol? Yes No Histic epipedon present? Yes No Matrix Color: 7.5 YR Histosol Subgroup: Subgroup: Typic Ustipsamme Is the soil a Histosol? Yes No Histic epipedon present? Yes No Hartix Color: 7.5 YR Histosol present Present Mottle Colors: Other hydric soil indicators: However Mottle Colors: Hydrocolory				65 F	A-C		14					
7. 8. 18. 18. 9. 19. 10. 20. Percent of dominant species that are OBL_FACW, and/or FAC				e ti	ACU		15					
8. 9. 19. 19. 19. 19. 19. 10. 20. Percent of dominant species that are OBL, FACW, and/or FAC VO Polis the hydrophytic vegetation criterion met? Yes												
19												
Percent of dominant species that are OBL, FACW, and/or FAC												
Solic   Solic   Solic   Solic   Solic   Subgroup:   Typic   Udipsamme   Is the soil on the hydric soils list? Yes   No   Undetermined   Is the soil a Histosol? Yes   No   Histic epipedon present? Yes   No   State   Solic   Mottled? Yes   No   Gleyed? Yes   No   Matrix Color:   1.51R   1.6   Sale   Mottle   Colors:   Mottle   Colors:   State   Mottle   Soil criterion met? Yes   No   Mottle   Colors:   State   Mottle   Soil criterion met? Yes   No   Surface   Water   Mottle   Soil saturated?   Soil criterion met? Yes   No   Surface   Surface   Water   Soil saturation.   Surface   Water   Soil saturation   Surface   Soil saturation   Soil saturation   Surface   Soil saturation   Surface   Soil saturation   Surface   Soil saturation   Soil sa												
Solicionals	= -						or EAC	UD.	10			
Series/phase: Plainfield fine Fand   Subgroup: Typic Udipsamme	is the	the hydrophy	ytic vegetation	n criterion m	net? Y	'es						
Is the ground surface inundated? Yes No Surface water depth: Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: List other field evidence of surface inundation or soil saturation.  Is the wetland hydrology criterion met? Yes No Rationale: JURISDICTIONAL DETERMINATION AND RATIONALE  Is the plant community a wetland? Yes No Rationale for jurisdictional decision:	Is the Is the Is the Matri Othe Is the	the soil on the soil a His the soil: Mot the soil: Mot the soil: Mot the soil: 2 the hydric so	ne hydric soils stosol? Yes _ ttled? Yes	No No Streng h	(ULUN)	No Histic epi Gleyed? Mottle  No	Pedon pre Yes Colors: _	determine esent? Y No	es	No		
Is the ground surface inundated? Yes No Surface water depth: Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: List other field evidence of surface inundation or soil saturation.  Is the wetland hydrology criterion met? Yes No Rationale: JURISDICTIONAL DETERMINATION AND RATIONALE  Is the plant community a wetland? Yes No Rationale for jurisdictional decision:						HYDR	OLOGY	·				
Is the wetland hydrology criterion met? Yes No	ls the	he soil satur pth to free-si	rated? Yes_ tanding water	No in pit/soil p	robe ho	No	Surfa					
Is the plant community a wetland? Yes No					Yes_	^	<u>ر</u> ۱۵					
Rationale for jurisdictional decision:				JURISDICT	TIONAL	DETER	OITANIM	N AND F	ANOITAR	LE	-	
		tionale for ju	irisdictional de	cision:								
Assessment Procedure.  Classification according to "Soil Taxonomy"	As	nis data form Assessment	n can be used Procedure,	for the Hyd	iric Soil							

	Field Investigator(s): K.Nim S  Project/Site: ACS	State: IN	Date: County LAKE	
	Applicant/Owner:E/A	<ul> <li>Plant Community #/Nan</li> </ul>	ne: <u>-</u> K	<del></del>
	Do normal environmental conditions exist at the pl Yes No (If no, explain on back) Has the vegetation, soils, and/or hydrology been s Yes No (If yes, explain on back)	ant community?		· · · · · · ·
	Indicator	VEGETATION	Indicator	
c otton wood		ratum Dominant Plant Si	pecies Status	Stratum Corroner ST
pin Cherry Santinan willow	us Silex exigua	12 13		
pepper vine	5 anneringer arence none	14 15		
and work	7. agrana- ra pracescono none	<u> </u>		
adrimation	10 Sandrescus on a de ma . * Mouse	19		
common stellabelity	Percent of dominant species that are OBL, FACW Is the hydrophytic vegetation criterion met? Yes	/, and/or FAC $62$ .	5%	
No.	Rationale:	110		
$\bigcirc$	Socies/phase: Plainfield fine sand	SOILS Subgroup:2	Typic Udipsanin	neuts
, 0	Is the soil a Histosol? Yes No His	tic epipedon present? Ye yed? Yes No Mottle Colors:	s No	
-	Rationale:			
		HYDROLOGY NoSurface water of		
,	Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: List other field evidence of surface inundation or s	oil saturation.		
no	Is the wetland hydrology criterion met? Yes Rationale:	No		
	JURISDICTIONAL D	ETERMINATION AND RA	ATIONALE	
	Is the plant community a wetland? Yes Rationale for jurisdictional decision:			
	This data form can be used for the Hydric Soil Assessment Procedure. Classification according to "Soil Taxonomy."			

				FORM			
	<i>F1</i> .	•	SITE DET	HOITANIMRE	METHOD!		
	Field Investigator(s): K. Nur Project/Site: ACS			S T N	Date:	LAKE	
•	Applicant/Owner: EPA		Plan	Community #			
1	Note: If a more detailed site descrip						
·	Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain	on back) Irology b <del>u</del> e	n significa	intly disturbed?			
		Indicator	VEGE	ТАПОИ		Indicator	
a sur	Dominant Plant Species	Status	Stratum	Dominant Plai	nt Species	Status	Stratum
Cottonwood	1. Populus dellocados	FACT		11			
lg tooth joplar	2. P. grandedentata			12			
Ob Willow,	3. Salis nygra	ctb:					
redosier logumes	5 Samura canadana						
complete thicked crys		FACW					
sentine form	7 Ludio 1912 glandulosa						
bedstraw		FALU					<del></del>
scotch broom	9. Certiana ecopenia	none		19			
Submp sewerry	10. Rhenshispletus	FALW	<del> </del>	20.	سر مار المار ا		
yes	Percent of dominant species that are Is the hydrophytic vegetation criterion Rationale:				716		
y in		No No Ray	No Histic epip Gleyed? Mottle	Undeterm edon present? Yes	Yes I	<u> </u>	oll s
			HYDRO	DLOGY			
	Is the ground surface inundated?	Yes	- No 🗸	Surface was	ter depth:		
year	Is the soil saturated? Yes Very Depth to free-standing water in pit/so List other field evidence of surface in	No <u></u> oil prob <del>u</del> no	ole:	·			
	ls the wetland hydrology criterion me Rationale:						
	JURISI	DICTIONAL	L DETERM	INA NOITANIN	RATIONALI	E	
	Is the plant community a wetland? Rationale for jurisdictional decision:						
	This data form can be used for the Assessment Procedure.  Classification according to "Soil Ta	Hydric Soil					

ı	Project/Site: A Plant Community #/Name: State form or a field notebook.	
·	Do normal environmental conditions exist at the plant community?  Yes No (If no, explain on back)  Has the vegetation, soils, and/or hydrology been significantly disturbed?  Yes No (If yes, explain on back)	
	VEGETATION Indicator	
Sudding Aspten  en oak  exarlet and  blue talk  chain to wood  ref hokobery  hear milion  matine from	Dominant Plant Species  Status Stratum Dominant Plant Species Status Stratum  1. Populus tremendes FAC  2. Quercus palustris tricular 12 your actum traspus north (RR) working number  3. Quercus palustris tricular 13. Jacquesa virgiania TA(-  4. Quelutina north 15.  5. Rhus (opethina north 15.  6. Cornus Stotonifica TACW 16.  7. Hania ar Sutifelia north 17.  8. Saux ruga od 18.  9. Choeles Sensuman FACW 19.	box
thake '	Percent of dominant species that are OBL, FACW, and/or FAC	
, , 0	Series/phase:    Plainfield fine   Sand   Subgroup:   Typic Udiple and a series	
	HYDROLØGY	
no^	Is the ground surface inundated? Yes No Surface water depth: Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: List other field evidence of surface inundation or soil saturation.  Is the wetland hydrology criterion met? Yes No Rationale:	
	WINISPONDED DETERMINATION AND BATIONAL F	
	JURISDICTIONAL DETERMINATION AND RATIONALE  Is the plant community a wetland? Yes No	
	This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community  Assessment Procedure. Classification according to "Soil Taxonomy."	

•	Project/Site:	Jebook.
	Do normal environmental conditions exist at the plant community?  Yes No (If no, explain on back)  Has the vegetation, soils, and/or hydrology been significantly disturbed?  Yes No (If yes, explain on back)	
broad-leaf contail	VEGETATION   Indicator   Indicator   Status   Stratum   Dominant Plant Species	
300	Percent of dominant species that are OBL, FACW, and/or FAC 100 70  Is the hydrophytic vegetation criterion met? Yes V No Rationale:  SOILS  Series/phase: Maurile learny fine Sand Subgroup: CIPIC Hay Is the soil on the hydric soils list? Yes No Undetermined Is the soil a Histosol? Yes No Histic epipedon present? Yes No Is the soil: Mottled? Yes No Gleyed? Yes No Matrix Color: A 2/0 Dlack Mottle Colors:  Other hydric soil indicators: Interviole to get acress Scinific In Standard Is the hydric soil criterion met? Yes No Rationale: Met Colors Col	
year.	Is the ground surface inundated? Yes No Surface water depth: Is the soil saturated? Yes No Surface water depth:	
	JURISDICTIONAL DETERMINATION AND RATIONALE  Is the plant community a wetland? Yes No Rationale for jurisdictional decision:	
	1 This data form can be used for the Hydric Soil Assessment Procedure and the Plant Comm.  Assessment Procedure. 2 Classification according to "Soil Taxonomy."	

		Plar	il Community #/Na			
	Do normal environmental conditions exist a Yes No (If no, explain on bac Has the vegetation, soils, and/or hydrology Yes No (If yes, explain on bac	ck) been signific	•	,		
horowlepf,	Indica  Dominant Plant Species Status	note Stratum	TATION  Dominant Plant S	Species	Indicator Status	Stratum
cat-toil.	3.		13			
)	4		15 16			
	8		18 19 20			
ys	Percent of dominant species that are OBL, is the hydrophytic vegetation criterion met?  Rationale:	? Yes	or FAC	·		
Ü	Series/phase: Maumee loarny fils the soil on the hydric soils list? Yes Is the soil a Histosol? Yes No Learner	ine Signof  No Histic epi	Undetermine pedon present? Yo	es No		udls
1)	Is the soil: Mottled? Yes No UMatrix Color: N. 240 black Other hydric soil indicators: Umder. Is the hydric soil criterion met? Yes Rationale: Meet Chromo	Work R VIIII				
Ç <sub>O</sub>	Is the ground surface inundated? Yes No No Depth to free-standing water in pit/soil problem to their field evidence of surface inundations.	No → hole:				nches
	Is the wetland hydrology criterion met? You		0			
	JURISDICTIO	NAL DETER	MINATION AND R	ATIONALE	<del></del>	
	Is the plant community a wetland? YesRationale for jurisdictional decision:	No				
	This data form can be used for the Hydric Assessment Procedure. Classification according to "Soil Taxonom".	Soil Assessn			munity	

ROUTINE ONSITE DETERMINATION METHOD<sup>1</sup> Date: \_\_\_\_\_\_County: LAKE \_\_\_\_ - State: Project/Site: \_\_\_ Plant Community #/Name: W Applicant/Owner; \_ Note: If a more detailed site description is necessary, use the back of data form or a field notebook. Do normal environmental conditions exist at the plant community? Yes \_\_\_\_ No \_\_\_\_ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes \_\_\_\_ No \_\_\_ (If yes, explain on back) VEGETATION Indicator Indicator Dominant Plant Species Stratum Dominant Plant Species Status Status Stratum FACU Go Hum Chousen \_\_\_\_\_ 11. \_ The lapters is The lypteroider FACW \_\_\_\_ 12. \_\_\_\_\_ FACW 13. -Oricilea Gensibilis 100 \_\_\_\_ 14. \_\_\_\_ 4 Lynskin Congustitolia wield catherl anl July which is \_\_\_\_ 15. \_\_\_\_\_\_\_ William K wor (40 cm 6 Cornus amerionum FACION \_\_\_\_ 16. \_\_\_\_\_ Many Soqued 7 Procesamen andresamentalium biding do feare none \_\_\_\_ 17. 8 Satix TITY 9 Spilen atitolia median sweet \_ 19. . 10. -20. \_\_ Percent of dominant species that are OBL, FACW, and/or FAC Is the hydrophytic vegetation criterion met? Yes V No Rationale: \_\_\_ SOILS Series/phase: Maurice Inchisting Source Subgroup: 2 Type of happage of S No \_\_\_\_ Undetermined Is the soil on the hydric soils list? Yes Is the soil a Histosol? Yes No Histic epipedon present? Yes No Is the soil: Mottled? Yes No Gleyed? Yes No Mottle Colors: point inumbored Other hydric soil indicators: Carrip: trict Is the hydric soil criterion met? Yes \_\_\_\_ Rationale: nie ets Of asmo **HYDROLOGY** No \_\_\_\_ Surface water depth: 6-8, oches Is the ground surface inundated? Yes Is the soil saturated? Yes \_\_\_ No Depth to free-standing water in pit/soil probe hole: \_\_\_\_\_\_ List other field evidence of surface inundation or soil saturation. Is the wetland hydrology criterion met? Yes \_\_\_\_ No Rationale: JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes \_\_\_\_ No \_\_\_\_ Rationale for jurisdictional decision: 1 This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure. <sup>2</sup> Classification according to \*Soil Taxonomy."

DATA FORM

DATA FORM ROUTINE ONSITE DETERMINATION METHOD<sup>1</sup> Date: LAKE Project/Site:\_\_\_ - State: Applicant/Owner; \_\_\_ — Plant Community #/Name: \_\_\_\_\_ Note: If a more detailed site description is necessary, use the back of data form or a field notebook. Do normal environmental conditions exist at the plant community? Yes No (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes \_\_\_\_\_ No \_\_\_\_ (If yes, explain on back) **VEGETATION** Indicator Indicator Dominant Plant Species Status Stratum Dominant Plant Species Status Stratum Sandbon william 061 11 Rose 11 1+1da Salve Exicara MONG 2. Querous alla FALL 12 Hamanales 21/3/una 3. Republic dellardes FACT 13. 4 Quercus relations mone 14 il oade gelenn buch 5 Bettila alleannophra 110 15 Live paron 6. Opposit a carlle said from \_\_ 16. -Making Barcallar Depoka angustigasa Obl \_\_\_\_ 17. -8 applican latitude of Del nountremaile det 9. Suminucas Carrillegers FACtor red over commo 10 Cornas stolorefora FACW \_\_\_\_\_ 20. \_\_\_ Is the hydrophytic vegetation criterion met? Yes \_\_\_\_ No \_\_\_\_ Rationale: \_\_\_ SOILS Series/phase: Manny langua Fine Sound Subgroup: 2 Type hope a great 5 Is the soil on the hydric soils list? Yes No Undetermined Is the soil a Histosol? Yes No Histic epipedon present? Yes Is the soil: Mottled? Yes No Gleyed? Yes No Matrix Color: Mottle Colors: Other hydric soil indicators: -Is the hydric soil criterion met? Yes Rationale: 1000 to Chromo 106 word will HYDROLOGY Is the ground surface inundated? Yes \_\_\_ No Surface water depth: Is the soil saturated? Yes No Depth to free-standing water in pit/soil probe hole: \_\_\_ List other field evidence of surface inundation or soil saturation.

iti osk

Is the wetland hydrology criterion met? Yes \_\_\_\_\_ No \_\_\_\_

## JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland?. Yes \_\_\_\_\_ No \_\_\_\_ Rationale for jurisdictional decision:

<sup>2</sup> Classification according to "Soil Taxonomy."

<sup>1</sup> This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

	Field Investigator(s): K. Nim	5			+21	Date:	LAVE	
	Project/Site: H&S Applicant/Owner: EPA			State:	<del>-/U</del>	County: _	LAKE	
	Applicant/Owner: Note: If a more detailed site descrip	otion is nece	essary, us	t Commi	unity #/Nar ck of data	ne:lorm or a m	eki notebook.	
	Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain	i on back) drology bee	•	·				<u> </u>
		Indicator	VEGE	TATION			Indicator	
	Dominant Plant Species	Status	Stratum	Domina	int Plant S	pecies	Status	Stratum
latin leaf salta	1. Institute argustylder	المنظا		11				
TO CONTROLL	2 BRUND LA CUST AL	Ach f		12			<del></del>	· · · · · · · · · · · · · · · · · · ·
Marker of the same	3. Gosa Hirida							
Comb Granden	4. Diving wife Virginions							
Scarle on the	5. Yurralia Coccinea	MONE		15				
13-10 00 10	6. Querce stiller	1 1 - U		16			<del></del>	
- こっぱい cara NAS ESDM (	7. July rue ruly of	restair 1		17		, <u>t</u>		
yellow buch	8. Botil a allegelinen							
1-	9			20			· · · · · · · · · · · · · · · · · · ·	
	Percent of dominant species that a		CM	540	Un	9_		
	Is the hydrophytic vegetation criteri	re OBL, FA	CW, and/	or FAC _	<u>- '( V</u>	0		
$\nu_o$	Rationale:			- INO				
$l_{\mathcal{D}}$	Transmitted.							
) 20	Series/phase: Williams Series/phase: Is the soil on the hydric soils list? Is the soil: Mottled? Yes Matrix Color: Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale:	Yes No	No Histic epip Gleyed? Mottle	Un bedon pr Yes Colors: _	determined esent? Ye No _	d <u>U</u> s N x	10	
	,			OFOGA				
	Is the ground surface inundated?		No 🗘	∠ Surfa	ice water o	depth:		<del></del>
	Is the soil saturated? Yes	No	•	•				
	Depth to free-standing water in pit/s List other field evidence of surface in							
$\sim \sqrt{\chi}$	Cist other flexi evidence of surface i							
O	Is the wetland hydrology criterion m Rationale:	et? Yes_	N	o				
	JURIS	DICTIONA	LDETER	MINATIC	N AND R.	ATIONALE		
	Is the plant community a wetland?	Yes	_ No	<del></del> .				
	Rationale for jurisdictional decision:	****			•			
• <del>•</del>	This data form can be used for the Assessment Procedure. Classification according to "Soil Ta	Hydric Soi						

DATA FORM ROUTINE ONSITE DETERMINATION METHOD<sup>1</sup> Nims ... Date: ...... \_ County: LAICE\_\_\_ Project/Site: \_\_ State: IN Applicant/Owner: \_\_\_\_\_\_\_ Plant Community #/Name: \_\_\_\_\_\_\_ Note: If a more detailed site description is necessary, use the back of data form or a net detailed notebook. Do normal environmental conditions exist at the plant community? Yes \_\_\_\_\_ No \_\_\_\_ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes No (If yes, explain on back) **VEGETATION** Indicator Indicator Dominant Plant Species Status Stratum Dominant Plant Species Status Stratum be order on a 1. Quercus borculis none 11. 2 Guerius velutiria none 12 \_ 3. Popular richtenten EAC+ 13. 4. Hammello Virginia FACa: 14. feature bells 5. Stendythium grammit wir FAC 15. Orthenvied 6. Selidago attissima FACY. 16. 8. Vilis urstivalis FACU 18. Caltha Dalystris obl ..... 19. -----10 Pipsacus sylvestris Movie 20. Is the hydrophytic vegetation criterion met? Yes \_\_\_\_ No \_\_\_\_ Rationale: \_\_ SOILS Series/phase: Pointield Cyre Seemed Subgroup: Typic Uchpsomments

Is the soil on the hydric soils list? Yes No Undetermined

Is the soil a Histosol? Yes No Histic epipedon present? Yes No Is the soil: Mottled? Yes
Matrix Color: 10 YR 2/1 No \_\_\_\_ Gleyed? Yes \_\_\_\_ No \_\_\_ \_\_\_ Mottle Colors: \_\_ 10 Other hydric soil indicators: -----Is the hydric soil criterion met? Yes No X
Rationale: Trunsected well adjusting issuratory sample point or an ablandoned railroad bed HYDROLOGY Is the ground surface inundated? Yes \_\_\_\_\_\_ No \_\_\_\_\_ No U Surface water depth: Depth to free-standing water in pit/soil probe hole: \_ List other field evidence of surface inundation or soil saturation. 00 Is the wetland hydrology criterion met? Yes \_\_\_\_\_ No \_\_\_\_ Rationale: JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes \_\_\_\_\_ No \_\_\_\_ Rationale for jurisdictional decision:

1 This data form can be used for the Hydric Soil Assessment Precedure and the Plant Community

B-2

Assessment Procedure.

<sup>2</sup> Classification according to "Soil Taxonomy."

	Field Investigator(s): 5. NIN	<u>nS</u>		State: # N	Date: County: _L k Name:	KE	
	Applicant/Owner: EPA  Note: If a more detailed site descrip	tion is nece	essary, us	t Community #/I e the back of da	Name:	notebook.	
	Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain	on back) trology bee		·			
!		Indicator	VEGE	тапон		Indicator	
• •	Dominant Plant Species	Status		Dominant Plan	t Species	Status	Stratum
bec' from	2 Galum axinum	<u>- 061</u>					
etille a rose	3 Rosa multifloca						
and been with	W4. Saline endua	FA(U)		14			
11500-40016	5. Sondius arvensis 6. Janathorhyasinylise.						
ellowroot	7			17			
•	8						
	10.			20			
	Percent of dominant species that a				) <u> </u>		
4	Is the hydrophytic vegetation criteri Rationale:			_ No			
·O	Series/phase: Caurrel load Is the soil on the hydric soils list? Is the soil a Histosol? Yes Is the soil: Mottled? Yes Matrix Color: Other hydric soil indicators: Is the hydric soil criterion met? Yes Rationale: Caralle to object	Yes V No V No V	No No Mottle	Undeterm pedon present? Yes Colors:	Yes No	or verily	
•	Embanicinus bordenin	& ditc	A cisto	P/EM	155 area		
		-		OLOGY			
	Is the ground surface inundated? Is the soil saturated? Yes		No <u>·</u>	Surface wat	er depth:		
,	Depth to free-standing water in pit/s	ail probe h	ole:				
No	List other field evidence of surface i	nundation	or soil satu				
	Is the wetland hydrology criterion m Rationale:			سيا_ ١٥	******		
	JURIS			INA NOITANIM			
	Is the plant community a wetland? Rationale for jurisdictional decision				N. 6 ( mar. )		
	This data form can be used for the Assessment Procedure. Classification according to "Soil Ta	Hydric So			and the Plant Con	nmunity	

1	Field Investigator(s):	K. Nims	)				Date:		
	Project/Site: AC	<b>&gt;</b>			State: _	IN	County:	LAKE	
	Applicant/Owner: Note: If a more detailed	d site description	n is nece	Plant ssary, use	Commu	inity #/Na ck of data	me: <del>t  </del> form or a fie	2 notebook.	
· 	Do normal environment Yes No ( Has the vegetation, soi Yes No (	ll no, explain on ls, and/or hydrol	back) ogy beer		,	-	. —		<del></del>
Black how mouth blackberry Lud bells Form bells Hundrut Geld sow histle	Dominant Plant Sixolie  1. Viburnum pru 2. Kubus canad 3. Ludwig a si 4. Stementhium gi 5. Cory lue arrei 6. Sonchus avve 7.	ensis simulation F ensis conduloso condulos	ACU AC AC-		Domina 11. —— 12. —— 13. —— 14. —— 15. ——			Indicator	
E,	8 9 10				18. —— 19. —— 20. ——			<del></del>	
no	Percent of dominant sets the hydrophytic vegorationale:	etation chienon i	DBL, FAC	CW, and/o /es	r FAC <u>آل</u>		9 a		
	Series/phase: Plans Is the soil on the hydric Is the soil a Histosol? Is the soil: Mottled?	soils list? Ye Yes No	s	No Histic epip	S Un edon pr	determine esent? Ye	d es N	<u> </u>	wents
n o	Matrix Color: Other hydric soil indicals the hydric soil critering Rationale: Unable beside the rail	itors: on met? Yes_ -ta olerain-	Soil s	Mottle ( No N	Colors: _	Hari	Downs	ery is at a	disch
,	Is the ground surface in Is the soil saturated? Depth to free-standing List other field evidence	water in pri/soil	Бьоря ид	) 6:	_ Surta	ace water			
ή O	Is the wetland hydrolog Rationale:	gy criterion met?	Yes _	No	v				
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	Is the plant community Rationale for jurisdictio	a wetland? Ye nat decision:	s	No_	<u>- 104</u> 22. 04	0 4 40	violina Feè was	point how	rever
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DATA FORM

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ı	Do normal environmental conditions Yes No (If no, explain Has the vegetation, soils, and/or hyd Yes No (If yes, explain	on back) drology bee	•	,	
		Indicator	VEGE	TATION	Indicator
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				TOTAL	
	Is the plant community a wetland? Rationale for jurisdictional decision:			,	
	1 This data form can be used for the Assessment Procedure. 2 Classification according to TSod Ta	Hyane Soi			

DATA FORM ROUTINE ONSITE DETERMINATION METHOD<sup>1</sup> Project/Site: State: County: LA ICE

Applicant/Owner: Plant Community #/Name: Name: Do normal environmental conditions exist at the plant community? Yes \_\_\_\_ No \_\_\_ (If no, explain on back) Has the vegetation, soils, and/or hydrology been significantly disturbed? Yes \_\_\_\_\_ No \_\_\_\_ (If yes, explain on back) VEGETATION Indicator Indicator Stratum Dominant Plant Species Dominant Plant Species Status Populus tremuloides THE 2. Corrus ammonum obl 12. 3. Salix nigral abl 13. 4 Coll + exign c abl 14.
5 Stepanthyungrumineum FAL 15 drag willow acodher be 6. Vitis Valloina \_\_\_\_\_ 17. -Is the hydrophytic vegetation criterion met? Yes \_\_\_\_ No \_\_\_\_ Rationale: SOILS Series/phase: Maymee loamy fine sand Subgroup: 14pic Is the soil on the hydric soils list? Yes \_\_\_\_ No \_\_\_ Undetermined \_\_\_\_\_ Is the soil a Histosol? Yes \_\_\_\_ No \_\_\_ Histic epipedon present? Yes \_\_\_\_ No \_\_\_ Is the soil: Mottled? Yes \_\_\_\_ No \_\_\_ Gleyed? Yes \_\_\_\_ No \_\_\_ Mottle Colors: \_\_\_\_\_ Other hydric soil indicators: -----Is the hydric soil criterion met? Yes V No Rationale: Lanable to obtain sample - Grea inundated HYDROLOGY No \_\_\_ Surface water depth: 6-9 inches Is the ground surface inundated? Yes V Is the soil saturated? Yes \_\_\_\_\_ No Depth to free-standing water in pit/soil probe hole: \_\_\_\_\_\_\_\_ List other field evidence of surface inundation or soil saturation. Is the wetland hydrology criterion met? Yes \_\_\_\_ No \_\_\_\_ JURISDICTIONAL DETERMINATION AND RATIONALE Is the plant community a wetland? Yes \_\_\_\_ No \_\_\_ Rationale for jurisdictional decision:

<sup>1</sup> This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community

Assessment Procedure.

<sup>2</sup> Classification according to "Soil Taxonomy."

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## Summary

At the request of the U.S. Environmental Protection Agency, Region V, the U.S. Fish and Wildlife Service conducted a wetlands delineation for site wetlands potentially impacted by contaminants originating at the American Chemical Services (ACS) hazardous waste site.

Office review and field surveying indicated numerous wetlands exist at the ACS site, many of which are not identified on the National Wetland Inventory. The diversity of wetland types present provide habitat for a variety of wildlife species.

#### INTRODUCTION

The American Chemical Services (ACS) Superfund site is located in Griffith, Indiana on the outskirts of the city's southeast side. The site was placed on the National Priorities List in 1987 as a result of investigations into chemical disposal practices on the site. ACS operates as a chemical/solvent recovery facility, which also has a limited chemical manufacturing operation. During the course of its operations, ACS dumped and otherwise disposed of unrecoverable solvents on the property, in addition to transporting waste to the adjacent Griffith City Landfill. Kapica Drum, Inc. also allegedly disposed of drum-cleaning residues on ACS property. These 3 sites total 52 acres and jointly comprise the official ACS site.

The National Wetland Inventory (Figure 1) indicates numerous and extensive wetlands within a 1-mile radius of the ACS site to the southwest, south, southeast, east, and northeast. There is an extensive wetland complex adjacent to the northwest boundary of the site. These wetlands are dissected and bordered by the Grand Trunk Western Railroad lines, the Chesapeake and Ohio Railroad lines, and the abandoned Erie-Lackawanna Railroad lines. The wetlands to the north of the Grand Trunk Western lines were not within the project boundary limits, however, they are likely hydraulically connected. The NWI map classifies this wetland complex as palustrine, emergent, semi-permanent/plaustrine emergent, seasonally flooded. The entire complex is approximately 78 acres, however, only 50.5 acres were included in the present delineation.

## **OBJECTIVES**

The objectives of this project were:

- To ground-truth and verify wetlands delineated on the National Wetland Inventory maps.
- To identify other wetland areas not included in the National Wetland Inventory.
- 3. To identify dominant vegetation in the various wetland areas.
- 4. To assess relative value of the various wetland habitats for fish and wildlife resources.

#### **METHODS**

The methods utilized in this delineation are outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989). Because of the relative homogeneity of the site, the soils assessment procedure was selected. Prior to the field work, an office review was conducted to preliminarily outline the area in question. Due to the unavailability of the most recent aerial photographs the preliminary boundaries were outlined from a 1984 photograph, obtained from the EPA project manager. Based upon the field inspection, the 1984 photograph was accurate with the exception of approximately 5 additional acres lost to the Griffith Landfill operation.

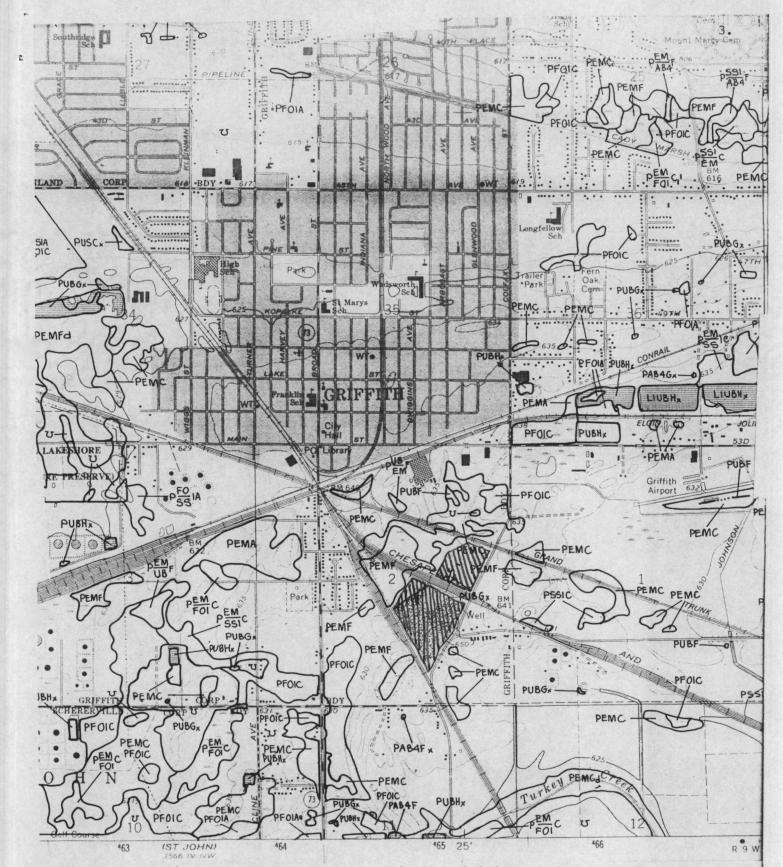


FIGURE 1. National Wetland Inventory map in the vicinity of the American Chemical Service site, Griffith, Indiana. USGS Highland Quadrangle. Cross-hatched area is ACS.

To transfer information from the aerial photograph, a clear plastic overlay was attached and the information transcribed. Points along the visual perimeter of the wetland were randomly selected and their compass bearings recorded to assist in field location. Location of the points followed the general contour of the visual perimeter and were arbitrarily located from 88 to 282 feet apart based upon a scale of 1 inch (in) = 25 millimeters (mm) = 20 feet (ft), 1 mm = 8.8 ft.

The preliminary map generated in the office (Figure 2) was used in the field reconnaissance flagging effort. In the field, point A was located on ground by its position relative to the railroad track embankment and the tree row in the upper northwest corner of the study area. Based upon the preliminary map, point B was located with the use of a Suunto MC-1 mirror compass and was measured off with a tape measure 220 feet S 66 E of point A. All other points were located and measured off in the same manner. Orange flags were placed at each point, and pink flags were placed every 55 feet to assist in maintaining the proper bearing alignment.

During the office review and map preparation a copy of the U.S. Soil Conservation Service Soil Survey for Lake County, Indiana (1972) was consulted to determine the presence or absence, and locations of hydric soils. The Lake County Indiana Survey sheet number 21 (Figure 3) indicates the majority of the area in question consists of Maumee loamy fine sand, interspersed with areas of Plainfield fine sand, Watseka loamy fine sand, and a small section of Tawas muck. The Maumee loamy fine sand and Tawas muck are classified by the U.S. Department of Agriculture and the Soil Conservation Service (1986) as hydric soils. To aid in the identification of the different soil types in the field, the soil profiles for Maumee loamy fine sand and Plainfield fine sand were recorded (Table 1). Because the soil sample probes were taken to a depth of 18 inches, only the first 3 incremented intervals were noted. Soil samples were collected at each point with a 21 inch Hoffer Soil Sampler probe. The soil samples were observed in the field and the lowest 3 inches were collected in whirl-pak bags for later comparisons to the Munsell Soil Color charts. possessing standing water did not yield soil samples due to wash-out upon extraction of the probe. In these instances the whirl-pak bag containing the point location tags were transported back to the office empty.

Representative observation areas (Figure 4) were selected based upon several In addition to selecting areas that met the hydric soil criterion, representative observation areas that had apparent characteristics, but were not identified on the National Wetland Inventory map were also chosen. communities were characterized, and the percent areal cover of the dominant species in the communities were visually estimated. Samples of the dominant vegetation at each of the representative areas were collected in 8 gallon plastic bags and transported to the office for later identification. A list of references used is included in Appendix 1. Once the vegetation was identified the information was recorded on field data forms and the indicator status of the species was obtained from the National List of Plant Species that occur in Wetlands; Indiana (1988). A wetland determination was then made for each representative observation area based upon the 3 mandatory technical criteria; hydrophytic vegetation, hydric soils, and wetland hydrology, as outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The information obtained in the survey was used to prepare the final map of the site wetlands.

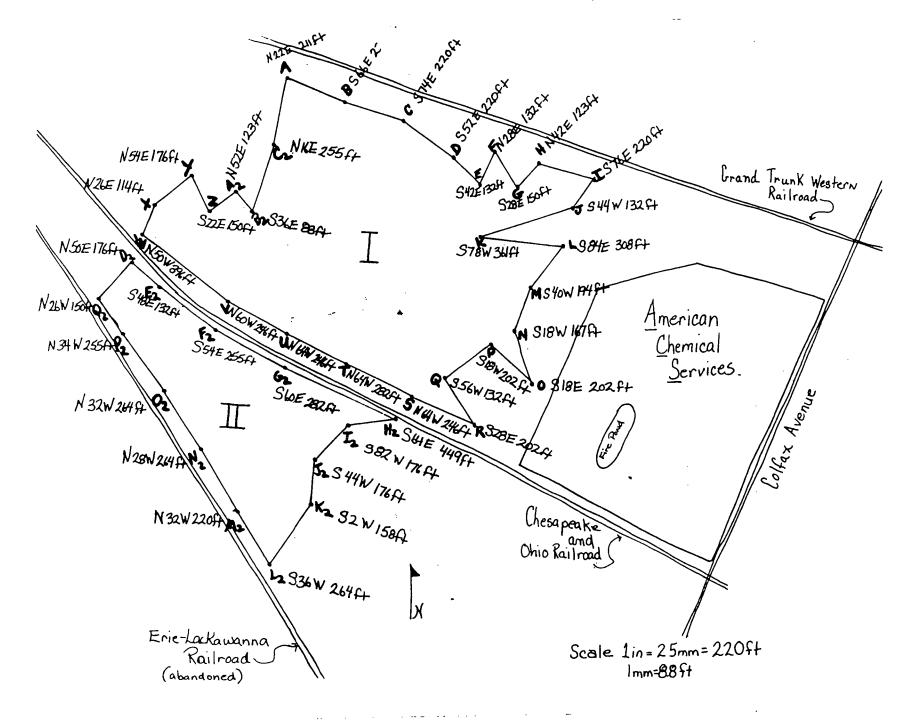


FIGURE 2. Preliminary wetland boundaries transcribed from 1984 aerial photograph. (Reduced 64%)

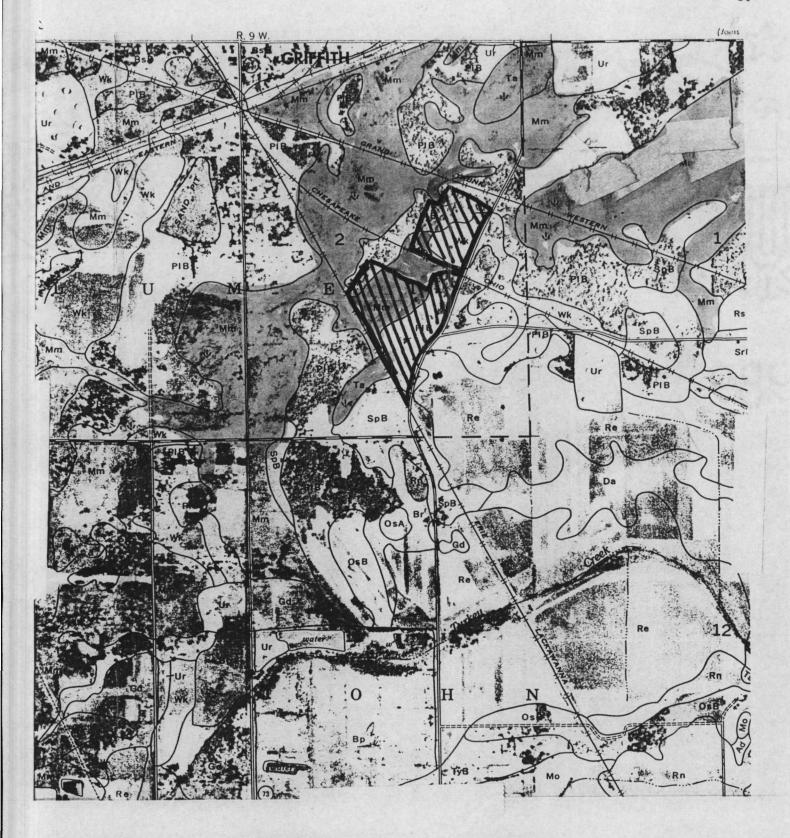


FIGURE 3. U.S. Soil Conservation Survey-Lake County. Plate number 21. Cross-hatched area is ACS. Shaded areas are hydric soils.

Table 1. Typical, Profiles for Maumee loamy fine sand (Hydric) and Plainfield fine sand (Non-hydric) in Lake County, Indiana.

Maumee loamy f	ine sand		Plainfield fine sand					
Depth	Color	Munsell Notation	Depth	Color	Munsell Notation			
0-9 inches	Black	N 2/0	0-4 inches	Dark Grey	10 YR. 3/1			
·16 inches	Black	N 2/0	4-6 inches	Greyish brown	10 YR. 4/2			
16-21 inches	Black	N 2/0	6-27 inches	Yellowish brown	10 YR. 5/4			

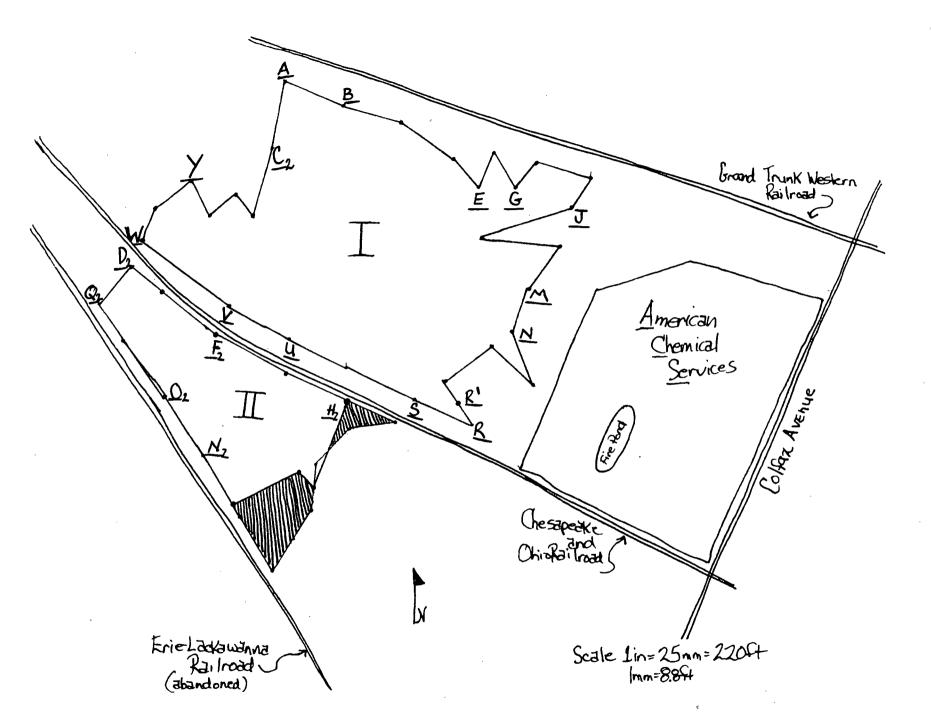


FIGURE 4. Representative observation areas for vegetation sampling. Cross-hatched area lost to landfill expansion  $^{\infty}$ 

#### RESULTS AND DISCUSSION

Of the 21 representative observation areas sampled, 13 met all 3 mandatory technical criteria for wetland determination (Table 2). Of the 8 areas that failed the mandatory technical criteria test, N and H $_2$  lacked all 3 criteria; M, R, S, and D $_2$  lacked the hydric soils and wetland hydrology criteria; C $_2$  lacked hydrophytic vegetation criteria; and F $_2$  lacked wetland hydrology criterion.

## Wetland I

Wetland I is bounded by the Grand Trunk Western Railroad, the American Chemical Services site, and the Chesapeake and Ohio Railroad. Based upon the results of the survey this area is more complex than the National Wetland Inventory (NWI) indicates (Figure 5). NWI shows this area as consisting of a large palustrine, emergent, semi-permanent mixed with seasonally flooded wetland. The NWI does not show any of the forested or scrub-shrub wetlands bordering the palustrine emergent area. Of the 5 representative observation areas that did not meet the technical criteria for wetland determination all were transitional zones between the wetland-upland interface because of the presence of non-hydric soils at 4 of the 5 areas. All of the areas possessed hydrophytic vegetation, but the percentage of FACU and UPL exceeded the percentage of FAC, FACW, and OBL species only at area N. It should be noted that some species were collected at the various areas that did not have indicator category designations; these species were not calculated into the percentages.

#### Wetland II

Wetland II is bounded by the Chesapeake and Ohio Railroad, the City of Griffith landfill, and the abandoned Erie-Lackawanna Railroad bed. Wetland II, according to the NWI is a palustrine, emergent, semi-permanent wetland. The various other habitat types surrounding it have been omitted from the official map.

This wetland area has been impacted due to past and present expansion of the City of Griffith Landfill. Approximately 5 acres of emergent/scrub-shrub/forested wetland on the north and southeast corners have been filled since the 1984 aerial photograph was taken. There is also a gravel road/turn-around that appeared to have been recently laid in the center of the palustrine, emergent, seasonally flooded wetland (Figure 5). This was probably an illegal fill; the U.S. Army Corps of Engineers has been notified.

There were 3 representative observation areas that did not meet the 3 technical criteria for wetland designation. These 3 areas, however, were placed along the railroad embankment, due to the location of a drainage ditch (approximately 5 feet deep) lying between the railroad tracks and the wetland area to the south of the ditch.

## NATURAL RESOURCES

This field investigation indicated that the natural resources and natural resource values of the wetland habitats are greater than originally suspected because of the diversity of habitat types present: emergent, scrub-shrub, and forested.

Table 2. Results of the technical criteria test for 21 representative observation areas at the ACS site, Griffith, Indiana.

Area	Soil Series	Hydrophytic Vegetat	Hydric	Soil	Wetland H	lydrology_	Wetland D	etermination
		% OBL, FACW, FAC	Yes	No	Yes	No	Yes	No
Α	Maumee loamy fine sand	85,5	Х		х		Х	
В	Maumee loamy fine sand	100.0	X		X		X	
E	Maumee loany fine sand	85.7	X		X		X	
G	Maumee loamy fine sand	88.0	X		X		X	
J	Maumee loamy fine sand	100.0	X		X		X	
M	Plainfield fine sand	60.0		X		X		X
N_	Plainfield fine sand	40.0		X		X		X
$R^{\perp}$	Plainfield fine sand	62.5		X		. X		X
R	Maumee loamy fine sand	77.0	X		X		X	
S	Plainfield fine sand	100.0		X		X		X
U	Maumee loamy fine sand	100.0	X		X		X	
V	Maumee loamy fine sand	100.0	X		X		X	
W	Maumee loamy fine sand	83.3	X		X		X	
Y	Maumee loamy fine sand	77.0	X		X		X	
$c_2$	Maumee laomy fine sand	40.0	X		X			X
$D_2^-$	Plainfield fine sand	50.0		X		X		X
$F_2$	Maumee loamy fine sand	60.0	X			X		X
$H_2^-$	Plainfield fine sand	40.0		X		X		X
$N_2^{\sim}$	Maumee loamy fine sand	100.0	X		X		X	
$o_2^{\sim}$	Maumee loamy fine sand	100.0	X		X		X	
$Q_2$	Maumee laomy fine sand	60.0	X		X		X	

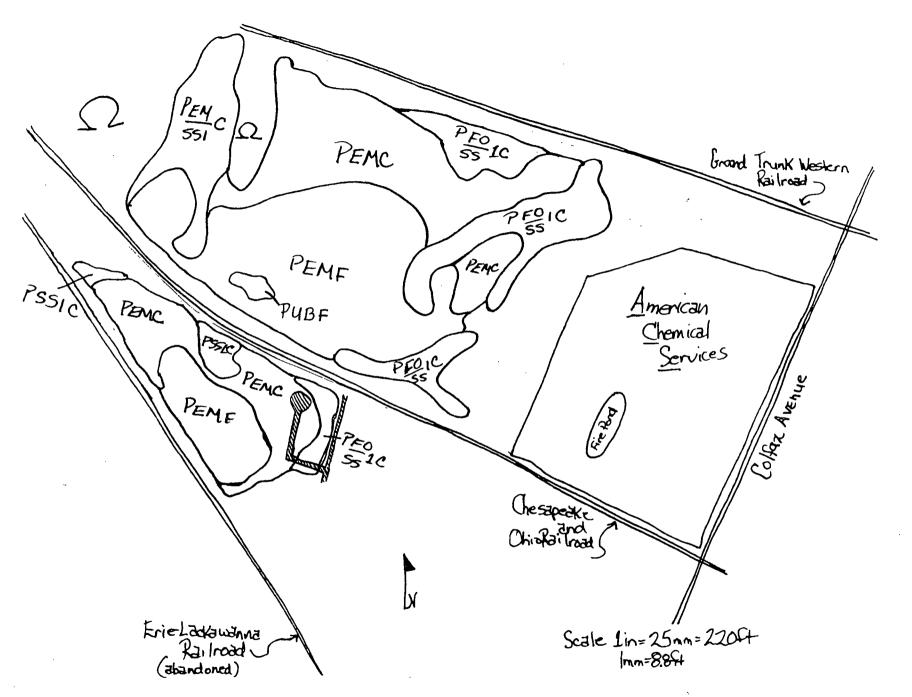


FIGURE 5. Wetland designations at the ACS site, Griffith, Indiana. Cross-hatched area is location of the illegal service road/turn-around fill.

The vegetation of "marshes" is characterized by emergent aquatic plants growing in permanent to semi-permanent shallow water. Also present are species of shallow open water communities, as well as those found in sedge meadows and seasonally flooded basins. Marshes are among the most productive of all wetlands for waterbirds and furbearers, and can also provide spawning and nursery habitat for many species of fish. Birds that use marshes for breeding and feeding include ducks, geese, rails, herons, egrets, terns, and many songbirds. Raptors such as the osprey, bald eagle, and northern harrier frequent marshes in search of prey. Important furbearers inhabiting marshes include beaver, muskrat, and mink. Excellent winter habitat can be provided for upland wildlife, including ring-necked pheasant and eastern cottontail (Eggers and Reed 1987).

The emergent wetlands in the centers of wetland areas I and II are predominated by cattails. A list of species collected can be found in Table 3. Cattail stands provide important food and cover for wildlife. For example, the rhizomes are eaten by geese and muskrats. Muskrats also use the foliage to construct their lodges, which in turn can provide resting and nesting sites for waterbirds. Yellow-headed blackbirds, red-winged blackbirds, and marsh wrens build their nests in cattail vegetation. Wetland area I contains an open water area with a muskrat den and much activity in this area was apparent.

The transitional zones between the emergent areas and shrubby or forest areas support hydrophytic vegetation on saturated but not inundated soils. Plants occurring in these areas include species found in other communities, such as the annuals of seasonally flooded basins, emergent aquatics of marshes, and invading shrubs or trees, which are present as scattered, small individuals.

The transitional emergent zones are particularly important for their water quality functions. Wildlife habitat is provided for many species including sandhill crane, ring-necked pheasant, common snipe, sedge wren, small mammals, and white-tailed deer. The composites found in these areas are an important fall and winter food source for songbirds.

Scrub-shrub wetlands are plant communities dominated by woody vegetation less than 20 feet in height and with dbh's of less than 6 inches growing on saturated to seasonally flooded soils. They can be dominated by willows and/or red-osier, and sometimes silky (swamp) dogwood. These areas usually retain some of the forbs, grasses, and sedges of the transitional emergent zones. The vegetation in scrub-shrub wetlands possesses a variety of wildlife value. Willows are browsed by white-tail deer and eastern cottontails; red-osier dogwoods provide berries for song birds and ruffed grouse and are browsed by deer and rabbits; and elderberry also provides berries for songbirds and ruffed grouse.

Forested wetlands are dominated by mature conifers or lowland hardwood trees. They are important for stormwater and flood retention, and also provide habitat for white-tailed deer, furbearers, songbirds, ruffed grouse, barred owl, and amphibians. The various wetland habitats at the American Chemical Services site are being used by a variety of wildlife species, many of which were observed during the reconnaissance flagging visit, and the field survey visit (Table 4).

#### ADDITIONAL WETLANDS

At a meeting held by the U.S. EPA project manager on February 28, 1990, FWS was requested to observe the area immediately east of American Chemical Services,

Table 3. List of Vegetation Species collected  $\mathbf{o}$ n April 10-11, 1990 at the ACS site, Griffith, Indiana.

Scientific Name	Common Name	Indicator Category
Agrimonia parviflora	Agrimony	FAC+
A. pubescens	Agrimony	None
<u>Ampelopsis</u> <u>arborea</u>	Peppervine	None
Apocyneum androsaemifolium	Spreading dogbane	None
<u>Aronia</u> <u>arbutifolia</u>	Red chokeberry	None
<u>Betula</u> <u>allegheniensis</u>	Yellow birch	FAC
^ l <u>tha</u> <u>palustris</u>	Marsh marigold	OBL
<u>tis occidentalis</u>	Hackberry	FAC-
Cornus ammonum	Swamp dogwood	FACW+
C. stolonifera	Red-osier dogwood	FACW
<u>Corylus</u> <u>americana</u>	Hazelnut	FACU
<u>Cytisus</u> <u>scoparius</u>	Scotch broom	None
<u>Dipsacus</u> <u>sylvestris</u>	Teasel	None
<u>Fragaria virginiana</u>	Common Strawberry	FAC_
<u>Galium</u> <u>aparine</u>	Bedstraw	FACU
<u>Hamamelis</u> <u>virgiana</u>	Witch hazel	FACU
<u>Liquidambar</u> styraciflua	Sweet Gum	FACW
<u>Ludwigia</u> <u>glandulosa</u>	Ludwigia	OBL
<u>Lyriodendron</u> <u>tulipifera</u>	Tuliptree	FACU+
<u>Nyssa sylvatica</u>	Tupelo	FACW+
<u>Onoclea</u> <u>sensibilis</u>	Sensitive fern	FACW
<u>Populus</u> <u>deltoides</u>	Cottonwood	FAC+
P. grandidentata	Large-tooth Poplar	FACU
<u>tremoides</u>	Quaking Aspen	FAC
<u>rrunus</u> <u>pennsylcanica</u>	Pin cherry	FACU
<u>Pteris</u> <u>esculenta</u>	Braken fern	FACU
Quercus alba	White oak	FACU
Q. bicolor	Swamp white oak	FACW+
Q. coccinea	Scarlet oak	None
Q. palustris	Pin oak	FACW
<u>Q. rubra</u>	Northern red oak	FACU
Q. velutina	Black oak	None
<u>Rhus</u> <u>copellina</u>	Dwarf sumac	None
<u>Riccia</u> <u>fluitans</u>	Liverwort	None
<u>Ricciocarpus</u> <u>natans</u>	Liverwort	None
<u>Rosa</u> <u>carolina</u>	Wild rose	FACU-
R. multiflora	Multi-flora rose	FACU
<u>R. nitida</u>	Northeastern rose	None
<u>Rubus allegheniensis</u>	Highbush blackberry	FACU+
R. canadensis	Smooth backberry	None
R. hispidus	Swamp dewberry	FACW
R. villosa	Low blackberry	None
<u>Salix</u> <u>discolor</u>	Pussy willow	FACW
<u>S. exigua</u>	Sandbar willow	OBL

Table 3. List of Vegetation Species (Con't).

Scientific Name	Common Name	Indicator Category
Sambucus canadensis	Elderberry	FACW-
Solidago altissima	Golden rod	FACU
Sonchus arvensis	Field sow-thistle	FAC-
Spiraea alba	Meadow sweet	FACW+
S. latifolia	Meadow sweet	None
Stenanthium gramineum	Featherbells	FAC
Thelypteris thelypteroides	Marsh fern	FACW
Typha angustifolia	Narrow-leaf cattail	OBL
latifolia	Broad-leaf cattail	OBL
<u>umus</u> rubra	Slippery elm	FAC
<u>Verbascum</u> thaspus	Wooly mullein	None
<u>Verbena</u> <u>urticifolia</u>	White vervain	FAC+
<u>Viburnum</u> <u>prunifolium</u>	Black haw	FACU
<u>Vitis</u> <u>aestivalis</u>	Summer grape	FACU
V. vulpina	Frost grape	FACW-
<u>Xanthorhiza</u> <u>simplissima</u>	Yellowroot	None

Table 4. List of wildlife species observed utilizing the wetland habitats at the American Chemical Services site, Griffith, Indiana April 10-11, 1990.

Scientific Name	Common Name
BIRI	DS
Agelaius phoeniceus	Red-winged blackbirds (many)
Aix sponsa	Wood ducks (1 pair)
Anas platyrhynchos	Mallard ducks (2 pairs)
Branta canadensis	Canada geese (1 pair)
<u>Charadrius</u> <u>vociferus</u>	Killdeer (1)
Corvus brachyrhynchos	Common crows (many)
<u>Dendrocopos</u> <u>pubescens</u>	Downy woodpeckers (2)
D. villosa	Hairy woodpeckers (1)
Larus spp.	Gulls (many)
<u>Phasianus</u> <u>colchicus</u>	Ring-necked pheasant (1 male)
Regulus satrapa	Golden-crown kinglets (2)
<u>Richmondena</u> <u>cardinalis</u>	Cardinals (3)
<u>Spinus</u> <u>tristis</u>	American goldfinches (1 pair)
MAMMA	ALS
Procyon lotor	Raccoon (tracks)
Odocoileus virginianus	White-tailed deer (tracks)
Ondatra zibethicus	Muskrats (3) & den
Sylvilagus floridanus	Eastern cottontails (4)

adjacent to Colfax Road to determine if wetlands were present. This area was walked during the field reconnaissance flagging visit, which revealed various wetlands, some of which were not indicated on the NWI maps (Figure 6). There is a palustrine, emergent, semi-permanent wetland approximately 7 acres in size about 0.1 mile east of Colfax Road, that is identified on the NWI map. The field check revealed that this wetland extends west and southward within 20-30 feet of the roadway. These wetlands would be classified as a combination palustrine, emergent/scrub-shrub forested area with water regimes ranging between temporary, saturated, seasonal, seasonal saturated, and semi-permanent.

A wetland delineation was not conducted for this area, however, the soil survey maps indicate that portions do contain hydric soils.

#### ENDANGERED SPECIES

The Highland area of Lake County is represented by many federal and state species of special emphasis/concern, in addition to several federal threatened and endangered species. An annotated list follows:

Indiana bat Fed E Myotis sodalis Fed E Peregrine falcon Fed T Pitchers thistle Great blue heron Sp EM/CN American bittern Black tern Least bittern King rail Yellow-crowned night heron Spotted turtle Western smooth green snake Franklin's ground squirrel Blanding's turtle

Bald eagle

(Falco peregrinus) \*Migratory
(Cirsium pitcheri)
(Ardea herodias)
(Botaurus lentiginosus)
(Chlidonis niger)
(Ixobrychus exilis)
(Ralus elegans)
(Nycticorax violaceous)
(Clemmys guttata)
(Opheodrys vernalis)
(Spermophilus franklini)
(Emydoidea blandingi)
(Haliaeetus leucocephalus) \*Historical

This endangered species list constitutes informal consultation only, and is not intended to fulfill the requirement of Section 7 of the Endangered Species Act of 1973, as amended. If, after review of the Phase I Remedial Investigation report, it appears likely that any endangered species may have been/may be affected by this site, it may be necessary to initiate formal consultation. If as a result of further consultation, a "no effect" determination is made regarding endangered species, that determination should be revisited after 1 year for new information, or newly listed species.

## **CONCLUSIONS**

- 1. Wetlands identified on the NWI do exist at the American Chemical Services site.
- 2. There are wetlands present at the site that are not identified on the NWI. These wetlands consist of palustrine, forested, and scrub-shrub transitional zones between the NWI-identified emergent wetland and upland areas.

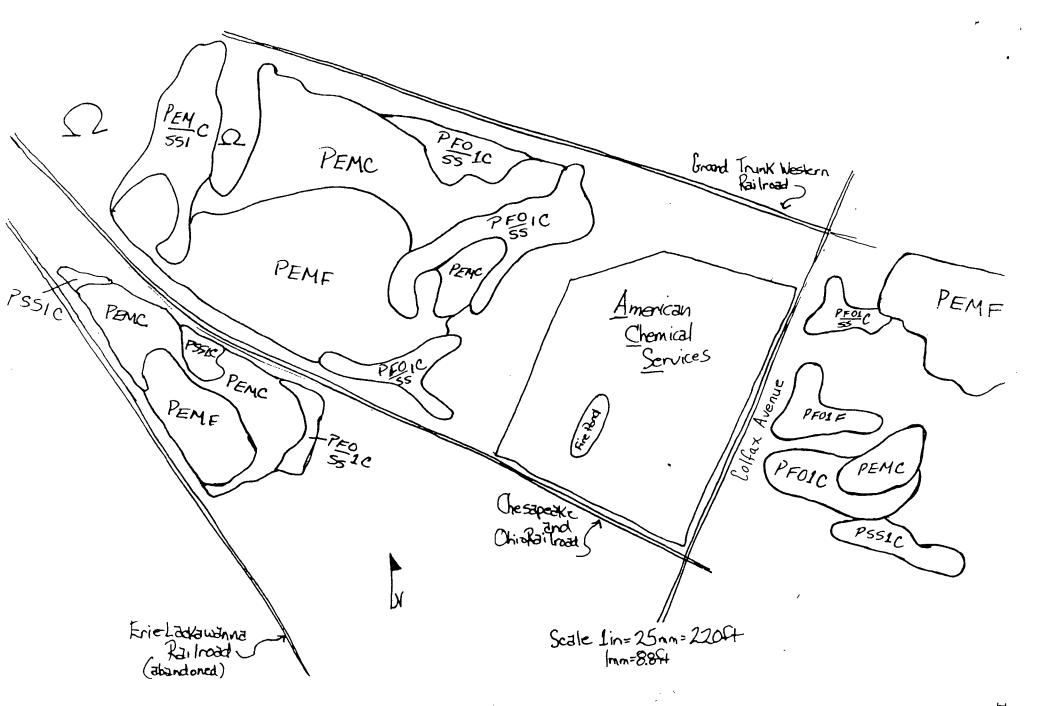


FIGURE 6. Approximate locations and classifications of additional wetlands located near the ACS site, east across. Colfax Avenue, Griffith, Indiana.

- 3. The wetlands present at the site provide habitat diversity for a variety of wildlife species.
- 4. The wetlands present on the site possess potential habitat for federal threatened and endangered species, state and federal species of special concern/emphasis, and other birds protected by the Migratory Bird Treaty Act.

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## APPENDIX 1

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APPENDIX 2
Field Data Forms